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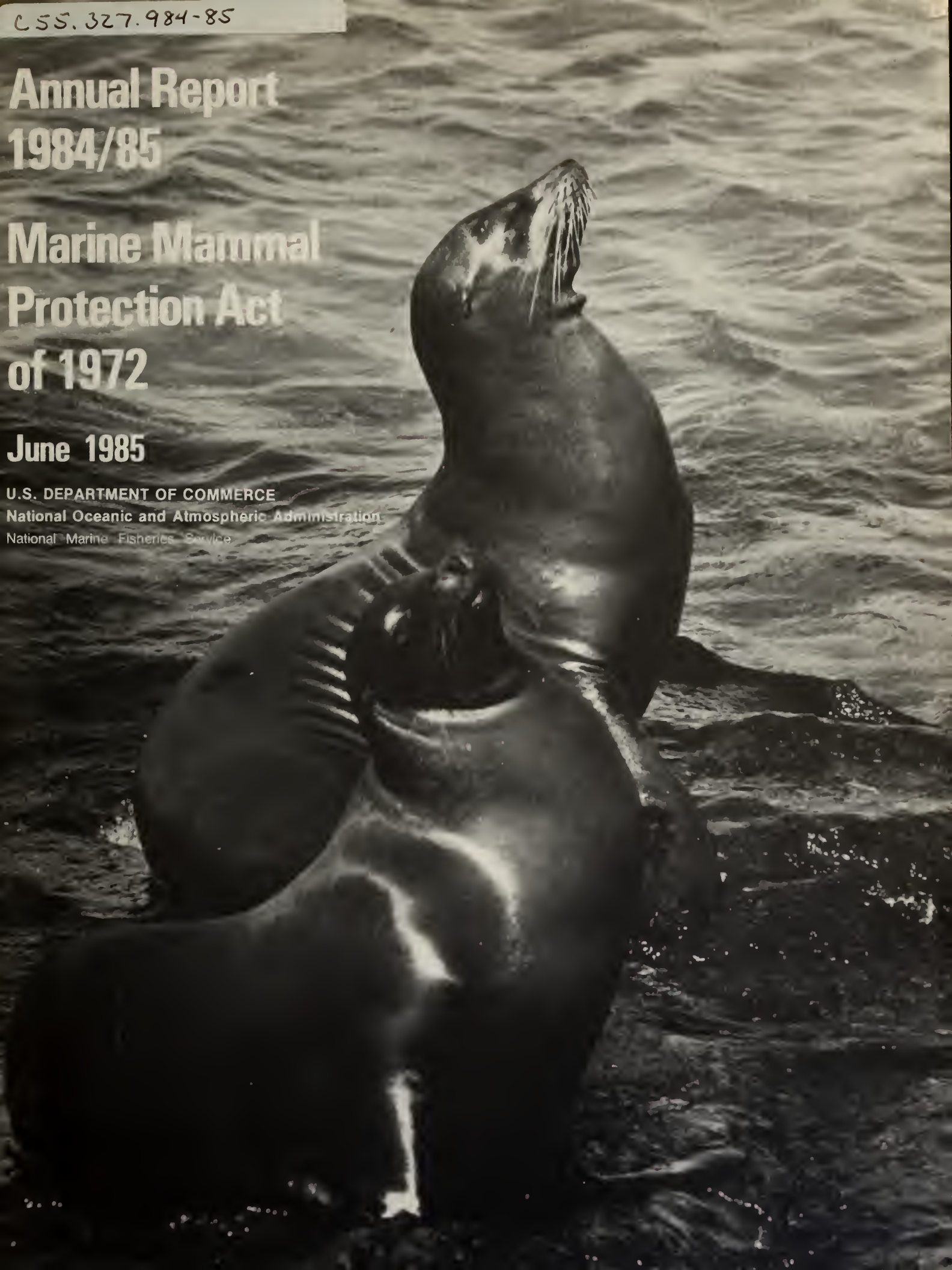
Annual Report 1984/85

Marine Mammal Protection Act of 1972

June 1985

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service



Cover: A pair of California sea lions from the Galapagos Islands, Ecuador, population. Photo by Mike Gosliner, Fisheries General Counsel Office, NOAA.

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Annual Report

Marine Mammal Protection Act of 1972

April 1, 1984 to March 31, 1985

U. S. DEPARTMENT OF COMMERCE
Malcolm Baldrige, Secretary

National Oceanic and Atmospheric Administration
Anthony J. Calio, Acting Administrator

National Marine Fisheries Service
William G. Gordon, Assistant Administrator

THE SECRETARY OF COMMERCE
Washington, D.C. 20230

JUL 11 1985

President of the Senate
Speaker of the House of Representatives

Sirs:

I am pleased to submit the Annual Report of the Department of Commerce regarding the administration of the Marine Mammal Protection Act of 1972 for the period April 1, 1984 through March 31, 1985, as required by Section 103(f) of the Act.

The Department of Commerce is responsible for implementing the Act with respect to whales and porpoises of the order Cetacea and seals and sea lions of the suborder Pinnipedia. The report details the activities of the Department regarding these marine mammals.

Sincerely,

Malcolm Baldrige

Secretary of Commerce

Enclosure

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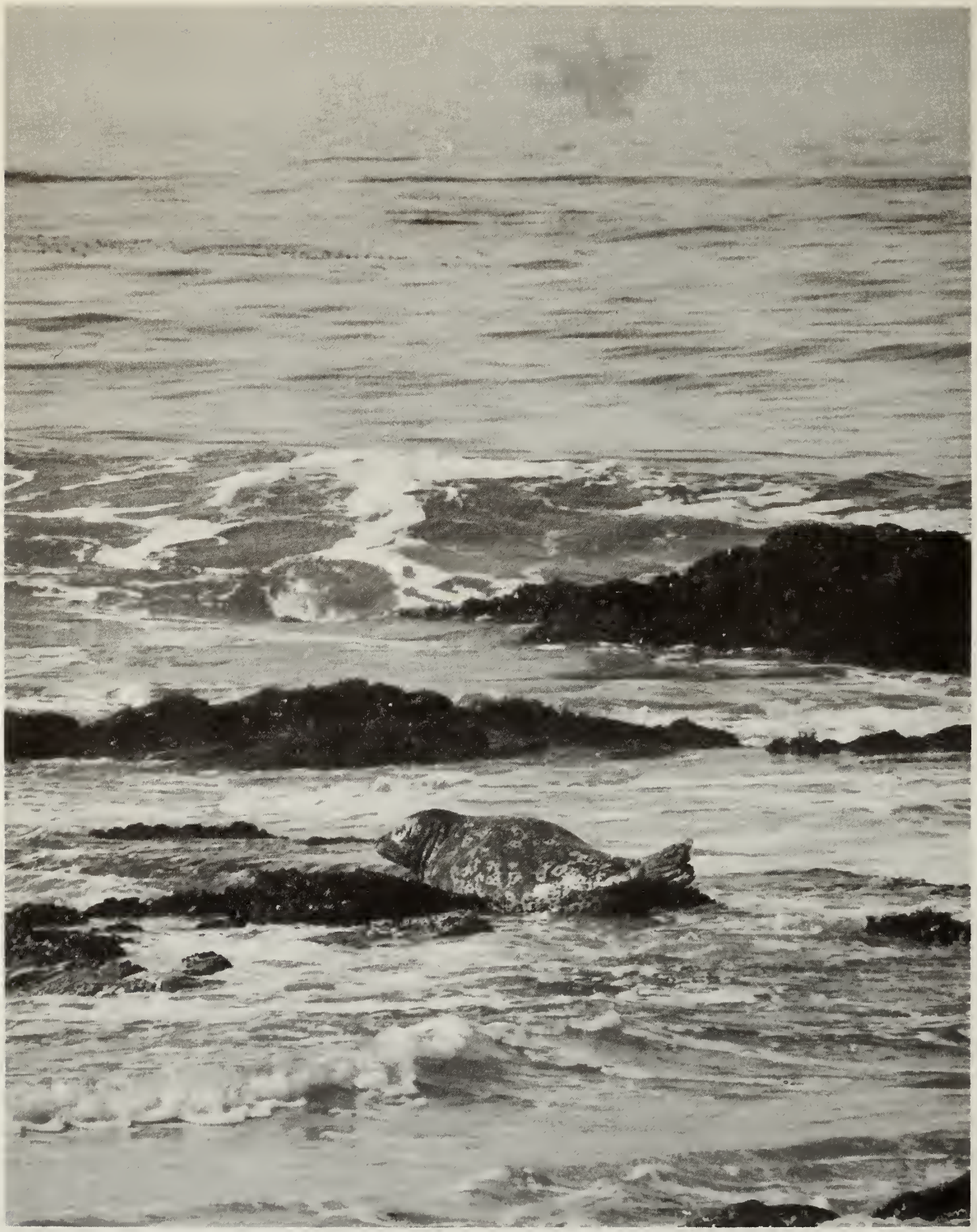

Harbor seal on haulout site along the California coast (Santa Barbara County). Photo by Dana Seagars, NMFS.

INTRODUCTION

Passage of the Marine Mammal Protection Act (MMPA or the Act) in 1972 committed the United States to long-term management and research programs to conserve and protect these animals. With few exceptions, the Act placed a moratorium on taking or importing marine mammals or their products into the United States. In 1976, the Magnuson Fishery Conservation and Management Act (MFCMA) expanded U.S. control of marine mammals to include the 200-mile fishery conservation zone (FCZ).

The Act delegates authority and responsibility for oceanic marine mammals to the Secretary of the Agency where the National Oceanic and Atmospheric Administration (NOAA) operates. Species of the order Cetacea (whales and dolphins) and the order Carnivora, suborder Pinnipedia (seals and sea lions), are the responsibility of NOAA's National Marine Fisheries Service (NMFS). The Department of the Interior is responsible for the dugong, manatee, polar bear, sea otter, and walrus.

Marine mammals that are already managed under international agreements, such as the northern fur seal, are exempt as long as the agreements further the purposes of the Act. Marine mammals may be taken for scientific research, public display, and incidental to commercial fishing. The 1981 amendments to the Act added two categories of "small take" to

the moratorium exception; one is for commercial fishing and the other applies to other activities such as oil and gas exploration. Also, certain natives of Alaska may take marine mammals for subsistence use and production of handicrafts.

The National Marine Fisheries Service grants or denies requests for exemptions, issues permits, carries out research and management programs, enforces the Act, participates in international programs, and issues rules and regulations to carry out its mission to conserve and protect marine mammals. Also, NMFS cooperates with the States, conservation organizations, the public, other Federal agencies, the Marine Mammal Commission, and many constituent groups including scientific researchers and the public display community.

NMFS's marine mammal research programs are the responsibility of the National Marine Mammal Laboratory (NMML), Northwest and Alaska Fisheries Center, Seattle, Wash.; the Northeast Fisheries Center, Woods Hole, Mass.; the Southeast Fisheries Center, Miami, Fla.; and the Southwest Fisheries Center, La Jolla, Calif. Management programs are the responsibility of the Alaska Region, Juneau, Alaska; the Northeast Region, Gloucester, Mass.; the Northwest Region, Seattle, Wash.; the Southeast Region, St. Petersburg, Fla.; and the Southwest Region, Terminal Island, Calif.

This annual report to Congress is available from the Office of Protected Species and Habitat Conservation, National Marine Fisheries Service, Washington, D.C. 20235.

SUMMARY

The MMPA is one of the principal wildlife conservation and management Acts administered by the Federal Government. NMFS has dedicated significant resources over the years to the study of marine mammal populations, life cycles and reproductive capacities to broaden our knowledge of these species.

Also, since the Act directs NOAA to use international agreements to further the protection and conservation of marine mammals, we are active members of many international groups. One of the primary organizations that the United States uses to further these aims is the International Whaling Commission. At the 36th Annual Meeting in 1984, the IWC continued its support

of the commercial whaling moratorium that it voted for in 1982. The IWC set commercial catch limits that represent a 30 percent reduction from the 1983 limits and an 85 percent reduction from those in force in 1973. Also, the IWC did not change the 1984-85 quota of 43 strikes for the Bering Sea stock of bowhead whales which are harvested by Alaskan Eskimos for subsistence uses. The Eskimos used 25 strikes during the 1984 season.

Some of the issues that brought about passage of the Act have been successfully resolved. In 1984, the Congress, in recognition of the progress made in reducing the number of porpoises killed in the U.S. purse-seine fishery for yellowfin tuna, reauthorized for an indefinite period the general permit held by the American Tunaboat Association; this permit allows an annual take of 20,500 porpoises. However, Congress strengthened the Act so that foreign nations exporting tuna into the United States must provide evidence that they have adopted a regulatory program that is comparable to the U.S. program for reducing the incidental take of marine mammals in commercial fisheries.

Over the years, many of the legal actions that involve the Act concern the agency's rulemakings regarding the take of porpoise in the yellowfin tuna fishery. In January 1984, the Ninth Circuit Court of Appeals reversed an earlier court decision which had invalidated the NMFS regulation requiring observers on tunaboats. In April 1984, representatives of the tuna fishing fleet filed a petition requesting a review of this decision by the Supreme Court. However, the Supreme Court denied the petition in June 1984, bringing this litigation to a close and allowing NMFS to resume its observer program to monitor the take of dolphins in the purse seine fishery for tuna. In another legal action, a group of environmental organizations sought to stop the 1984 harvest of northern fur seals on the Pribilof Island because they believed it violated the MMPA. The harvest is conducted under provisions of the Interim Convention on Conservation of North Pacific Fur Seals and the Fur Seal Act. The judge found that the Convention and the Fur Seal Act take precedence over the MMPA.

One problem that has not been resolved since passage of the Act is the interaction between marine mammals and the fishery resource. Marine mammals and fishermen often compete for the same resource. Currently, we are studying the incidental catch of northern sea lions in the Shelikof Strait, Alaska; damage done to fish and fishing gear by seals and sea lions on the West Coast and the potential impact seals and sea

lions may have on free swimming salmonids in rivers and estuaries in the Northwest.

Although commercial fishermen may obtain a Certificate of Inclusion (under a General Permit) to take marine mammals that interfere with their catch, current regulations do not allow commercial passenger fishing vessels (CPFVs) to harass marine mammals interacting with their passenger's catch. In response to a petition from the Sportfishing Association of California, NMFS has issued a proposal to modify the definition of commercial fishing operations to include CPFVs. Final regulations are expected to be issued by September 1985.

One of the most extensive administrative programs in NMFS is the permit system that authorizes the taking of marine mammals for scientific research and public display. This agency not only reviews and decides whether to issue the requested permits, but continues to monitor the permits as long as they are valid. Currently, NMFS is monitoring 332 permits for scientific research and public display.

Another highly visible NMFS program is the Regional Marine Mammal Stranding Network. Four NMFS Regions have fully operational networks and Alaska is establishing one at this time. The networks include individuals and organizations that have volunteered to cooperate with NMFS when there is a stranding. As an example of the work carried out by a stranding network, participants in the Northwest Network investigated over 400 marine mammals strandings in Washington and Oregon in 1984. The Southwest Region network uses computerized data to spot trends in strandings. (See Cetacean Strandings Table for this Region).

The provisions of the Act are enforced by special agents from NMFS and by State agents under contract to NMFS. This past year, documented violations included unlawful taking or harassment of marine mammals. Also, agents seized 566 items that are illegal under the Act. Illegal items often include marine mammal parts or products that are brought into the United States.

The actual management and research programs for marine mammals are carried out in the NMFS Regional Offices and Fisheries Centers located along the east and west coasts, Hawaii, and the Gulf of Mexico. The Alaska Region manages and enforces the subsistence hunt of bowhead whales, monitors the population of humpback whales in Southeast Alaska, and administers the seal rookeries and oversees the annual seal

harvest on the Pribilof Islands. The Northwest Regional Office in Seattle is primarily involved with programs that concern marine mammal and fishery interactions. The National Marine Mammal Laboratory at the Northwest and Alaska Fisheries Center is primarily concerned with research on bowhead whales, humpback whales, Dall's porpoise, and northern fur seals.

The Southwest Region is concerned with managing and monitoring the general permit that allows an incidental take of porpoises in the purse seine fishery for yellowfin tuna. The Region manages the observer program aboard the purse seine vessels, inspects tuna seiners for porpoise safety gear, and conducts workshops for skippers of seiners. The Southwest Fisheries Center is responsible for research on marine mammals in two areas: tuna/porpoise and coastal marine mammals. Amendments to the Act in 1984 called for an expanded monitoring program of dolphin stocks involved in the tuna fishery. Also, they are collecting information to assess the population status of six coastal species that may be affected by human activities. Animals studied include sea lions, harbor and northern elephant seals, harbor porpoises, bottlenose dolphins and pilot whales.

The Center's Honolulu Laboratory organized the entanglement workshop held in November 1984 in Honolulu. Workshop participants examined the problem of marine mammals, birds, turtles and fish becoming entangled in lost and discarded fishing gear and other debris.

On the East and Gulf coasts, the Southeast Region and the Southeast Fisheries Center are concerned with the populations of bottlenose dolphins that are taken for public display. To assure that live-captures and removals do not have an adverse impact on local populations of these animals, NMFS limits the number that can be taken from any given area. Permit holders must coordinate all taking with the Southeast Region. The Center is monitoring and assessing the status of the local populations from which the removals are made.

The Northeast Region is concerned about increased whale watching in New England waters and has issued guidelines for this popular activity. The Region and the Northeast Fisheries Center will distribute brochures that include the guidelines to private boaters, whale watchers, and members of the whale watch industry. Also, they are investigating research methods to determine the cumulative effect of these activities on whales. The Region, along with the Marine Mammal Commission, is sponsoring a workshop to determine what research and

management efforts are necessary to protect right whales in the western North Atlantic Ocean. The Northeast and Southeast Regions and Northeast and Southeast Fisheries Centers are coordinating their research and management efforts for species along the Atlantic coast that are common to both Regions. The Northeast Fisheries Center is funding a study to assess the incidental take of marine mammals in New England groundfish gillnets, and both the Region and Center are investigating the taking of marine mammals in all fisheries.

1984 AMENDMENTS TO THE ACT

In 1984, the Congress amended and reauthorized the Act through 1988. Most of the amendments concern the incidental taking of marine mammals in commercial purse-seine fishing for yellowfin tuna. One amendment extends the general permit held by the American tunaboat industry indefinitely subject to the following conditions:

- the permittee is required to use the best safety techniques and equipment available to provide for the safety of marine mammals;

- all permit conditions in effect on 17 July 1984 shall apply throughout the permit's term, except that ajustments may be made with respect to fishing gear, fishing practice requirements, and permit administration, provided that such terms and conditions are based on the best scientific information available; and

- annual quotas of 250 coastal spotted dolphins and 2,750 spinner dolphins were established, subject to the requirement that there be no "accidental taking" of either species during the period that incidental taking is allowed. These quotas are to be included in the overall annual quota established by the Secretary of Commerce.

Also, the Congress strengthened the requirement that the Secretary of the Treasury ban the importation of commercial fish or fish products if those fish have been caught with fishing technology that results in the incidental kill or

incidental serious injury of ocean mammals in excess of U.S. standards. The new language requires foreign nations to take more vigorous steps towards implementing a marine mammal protection program for their fishing fleets. This action was taken because the Congress recognizes that the U.S. tuna fleet has made considerable progress in reducing the number of porpoise killed incidentally in the course of tuna purse seining, but high levels of mortality may be resulting from the fishing practices of foreign flag vessels. The Act requires each foreign exporting nation to provide documentary evidence that it has adopted a regulatory program for the incidental take of marine mammals that is "comparable" to that of the United States, and that the average rate of the incidental taking is "comparable" to that of domestic vessels.

In addition, the Secretary of Commerce was directed to start a scientific research program to monitor the "indices of abundance and trends of marine mammal population stocks which are taken incidentally in the course of commercial purse seine fishing for yellowfin tuna in the eastern tropical Pacific Ocean by 1 January 1985." If, after considering the best scientific information available, the Secretary determines that the taking allowed by the general permit is having a "significant adverse effect" on a marine mammal population stock, appropriate action must be taken to modify the permit.

PART I

ADMINISTRATIVE PROGRAMS

Permits for the Incidental Taking of Marine Mammals During Commercial Fishing Operations

A general permit system established under the Act authorizes the incidental taking of marine mammals by domestic and foreign fishermen during commercial fishing operations. General permits are issued by NMFS to foreign fishing associations or embassies whose governments have a governing international fishery agreement (GIFA) with the United States allowing them to fish in the U.S. fishery conservation zone. For 1985, NMFS has issued or continued 12 foreign general permits that allow a total taking of 6,704 marine mammals. This includes the take of 5,500 Dall's porpoise during salmon gillnet operations under a general permit issued to the Federation of Japan Salmon Fisheries Cooperative Associations.

If domestic fishermen incidentally take marine mammals, they may apply for a certificate of inclusion issued under a general permit. Excluding the general permit issued to the American Tunaboat Association and its annual quota of 20,500 porpoise, NMFS has issued nine domestic general permits which are valid until December 31, 1988. These permits allow a total taking of 6,425 animals each year. Table 1 in the Appendix includes a list of foreign and domestic fishing corporations with permits and the number of marine mammals they are allowed to take.

Authorizations that Allow a 'Small Take' of Marine Mammals

Commercial fishing. The Act, as amended in 1981, allows for the incidental but not intentional taking of small numbers of nondepleted species or stocks of marine mammals by U.S. citizens engaged in commercial fishing operations. This exemption to the general permit requirements of the Act can be granted only if the total taking will have a negligible impact

on the species or stocks involved and if a reporting system has been established among the fishermen involved to monitor and report any taking.

Final guidelines covering this small take have been published, and they include procedures for applying for a Letter of Exemption and the requirements for establishing a system for reporting takings.

An exemption has been granted to the National Fish Meal and Oil Association which allows owners and operators of U.S. menhaden vessels an annual take of up to 33 marine mammals; this exemption is valid through 1988.

In the purse-seine fishery for menhaden, 81 vessels were active in the 1983 Gulf fishery and 41 were active in the 1983 Atlantic fishery. During the year, these vessels set their nets over 100,000 times. The only confirmed report of a marine mammal taken incidental to this fishery involved the accidental encirclement of an Atlantic bottlenose dolphin in the Gulf of Mexico in 1981. However, since there have been several unconfirmed reports of incidental takes of other marine mammals, the Association filed for a small take exemption.

For reporting purposes, the Association will distribute copies of a reporting form and marine mammal identification guide to the captains of all menhaden fishing vessels owned or operated by the members of the association. Information collected will include the location, depth, time, and date of any takes, and the sex, species, and number of marine mammals encountered. The captains will be encouraged to describe the take in an effort to identify problems and steps that can be taken to reduce injury and prevent mortalities.

A Letter of Exemption has also been issued to the New England groundfish gillnetters to take up to 180 harbor porpoise, 50 harbor seals, and a total of 50 other species (grey seal, white-sided dolphin, common dolphin, white-beaked dolphin, and pilot whale) during groundfish gillnetting operations in the Gulf of Maine. The Division of Wildlife, University of Maine at Orono, will be the recipient of any reports of marine mammals taken under this exemption which is valid through 1988.

'Small Take' of Marine Mammals (other than commercial fishing). NMFS received a request from the Department of the Air Force to allow a small take of marine mammals incidental to space shuttle launches from Vandenberg Air Force Base,

California. The Air Force describes the taking as infrequent, incidental, and unintentional harassment due to focused sonic booms generated over the Northern Channel Islands when the space shuttle is launched from VAFB. Launches are expected to begin in 1986 and continue through 1994. Out of 80 planned launches, a maximum of seven are predicted to occur in trajectories that will produce focused sonic booms over the Northern Channel Islands. Focused sonic booms occur when the space shuttle curves toward the horizontal, and its sonic boom is focused into a narrow zone of particularly high sound pressure.

The Air Force requested an authorization to potentially harass six species of pinnipeds including the harbor seal, California sea lion, northern sea lion, northern elephant seal, northern fur seal, and Guadalupe fur seal. Since NMFS has proposed to list the Guadalupe fur seal as threatened under the Endangered Species Act (ESA), we cannot authorize allowing a take under this section of the MMPA.

The regulations issued in 1982 to govern a small take of ringed seals incidental to on-ice seismic activities in the Beaufort Sea remain in effect. Five seismic companies requested and were authorized to take ringed seals for the 1985 season.

Permits for Scientific Research and Public Display

The Act allows permits to be issued for taking or importing marine mammals for scientific research or public display. Three steps must be taken before a permit can be granted:

1. Receipt and initial review of the application by NMFS, publication of a notice of receipt in the Federal Register, and transmittal of the application to the Marine Mammal Commission for review;

2. A 30-day review of the application by NMFS, the Commission, the public, and other Federal agencies; and

3. Final processing by NMFS, including consideration of comments, and approval or denial of the application.

During the past year, NMFS considered 42 applications for permits. Of these, 17 have been issued for scientific research and 14 for public display. Also, NMFS acted on 112 requests for modifications or authorizations.

Killer Whale Permit. A permit issued to Sea World, Inc., in November 1983 to take killer whales for public display and scientific research continues to receive national attention. The permit authorized the capture of up to 100 killer whales over a five year period. Of those, up to 10 were authorized to be taken and maintained in captivity for display and breeding. The remaining 90 animals were authorized to be held temporarily for research and released. In 1984, several individuals and organizations filed a motion for summary judgement with the U.S. District Court of Alaska charging that the Federal Government had violated the National Environmental Protection Act in issuing the permit by failing to prepare an Environmental Impact Statement (EIS). In January 1985, the court held that an EIS would have to be prepared and declared the permit invalid.

Transfer of Marine Mammal Management to the States

In 1983, NMFS and the Fish and Wildlife Service published final regulations implementing the 1981 amendments regarding return of management. These regulations establish new procedures for the transfer of management authority, the form and minimum requirements of a state application, and the continuing relationship of Federal and State wildlife agencies on marine mammal issues.

Although NMFS has not received any applications for return of management, the following States have indicated interest and requested advice.

Alaska. Recently, the State held about 50 meetings in cities and villages to explore whether Alaska should apply for return of management. No decision has been made by the State at this time.

California. Since 1978, California has maintained a marine mammal program collecting information to be used if the State requests a transfer of management authority. However, in June 1984, the California Department of Fish and Game informed NMFS that it had decided not to seek transfer of management at this time. The Department expressed interest in continuing to study marine mammal/fishery interactions and to develop non-lethal means to mitigate these interactions.

Washington and Oregon. The Washington Department of Game and the Oregon Department of Fish and Wildlife have received funds from NMFS to assess regional pinniped populations, to study and assess marine mammal/fisheries interactions, and to evaluate measures to mitigate these interactions. Since both States have expressed an interest in return of management authority, they are using this information to develop management plans and population determinations as required for transfer of management.

Regional Marine Mammal Stranding Networks

All five NMFS Regions are operating marine mammal stranding networks that include individuals and organizations that volunteer to cooperate with NMFS. Authorized members collect scientific specimen materials, record the event with the Regional Coordinator, and assist local and Federal authorities in the disposal of the animals.

Alaska. The Alaska Region has taken steps to establish a stranding network which will provide data on cetacean strandings to the Marine Mammal Events Program coordinated by the Smithsonian Institution. Stranding data are presently being compiled by the Juneau Office. Following the establishment of Regional Response Centers, all villages, flying services and public safety officials will be notified of the appropriate methods for reporting sightings.

Northwest Region. Participants in the Northwest Marine Mammal Stranding Network handled over 800 marine mammal strandings in Washington and Oregon in 1984. Scientific investigations were made of 400 of these strandings. Harbor seals and sea lions accounted for over 95 percent of the strandings. In the Northwest, the general public is advised to

report strandings to the Washington State Patrol or the Oregon State Police who relay the information to one of five Stranding Network Response Centers. The Response Centers coordinate the appropriate response which varies from providing advice to dispatching a team of scientific investigators. Since many of the reported strandings cannot be verified and others are healthy seals or sea lions that were thought to be sick by the public, the Response Centers screen all calls to determine which reports are verifiable sightings that might warrant a prompt response or scientific investigation.

Network participants were busy with an unusually high number of strandings of California sea lions from late August through December in Oregon and the outer coast of Washington; these may have been caused by an outbreak of a bacterial infection, leptospirosis. Gray whale strandings in Puget Sound drew considerable media attention due to speculation that the strandings may be related to pollution. The number of gray whale strandings in the Northwest was, again, unusually high. In both 1983 and 1984, there were 27 gray whale strandings compared to an average of 2 to 4 strandings in past years.

Southwest Region. The Southwest Region's Network coordinator uses computerized data to evaluate stranding trends, quality of data, and effectiveness of marine mammal rehabilitation programs. In 1984, 797 pinniped, 101 cetacean, and three sea turtle strandings were reported for the California coast (see Table 1). An increase in the number of reported California sea lion strandings has been attributed primarily to the same bacterial infection noted in male sea lions in the Northwest Region.

The Region made presentations on network operations to the Pacific States Outer Continental Shelf Regional Technical Working Group, several coastal management agencies, The Wildlife Society, and the First West Coast Marine Mammal Conference.

Southeast Region. The Southeast Region Stranding Network maintains a directory of all participants. During this year, 25 Letters of Authorizations (LOA) signed by the Regional Director were issued to individuals who requested to participate in the network.

Northeast Region. The Northeast Regional Stranding Network (NRSN) reports strandings, notifies enforcement agencies, recovers live and dead stranded marine mammals and coordinates and reports scientific research. The regional network includes representatives from the NMFS law enforcement

division, State law enforcement agencies, State and local fisheries officers, and six major institutions that hold Letters of Agreement from the Northeast Region. All non-law enforcement personnel working in the network come under the control of the Letter of Agreement holders.

Letters of Agreement have been issued to organizations that have displayed expertise, professionalism, and cooperation when dealing with stranded marine animals. Holders of Letters are the only institutions that can legally take part in a marine mammal stranding in the Northeast Region.

The Region is divided into separate geographical areas of responsibility for each of the six institutions. The network has proven its ability to use data from strandings, provide an efficient format for its dissemination, ease enforcement efforts, encourage cooperation between agencies, investigators, institutions and the public, and reduce duplication of effort. The network is responsible for identifying individuals and/or institutions in the areas that are carrying out programs beyond basic data collection and assisting their needs. Marine mammal parts are made available to qualified universities, museums and individual researchers for public display or educational purposes.

Cetaceans reported to the California Marine Mammal Stranding Network in 1984. Table 1.

Common Name - Species	Number Reported	Percent Of Total
Harbor porpoise - *Phocoena phocoena*	42	40.0
Common dolphin - *Delphinus delphis*	22	21.0
Gray whale - *Eschrichtius robustus*	12	11.4
Pacific white-sided dolphin - *Lagenorhynchus obliquidens*	8	7.6
Bottlenose dolphin - *Tursiops truncatus*	4	3.8
Dall's porpoise - *Phocoenoides dallii*	3	2.8
Cuvier's beaked whale - *Ziphius cavirostris*	2	1.9
Unidentified beaked whale - *Mesoplodon* spp.	3	2.8
Pygmy sperm whale - *Kogia breviceps*	2	1.9
Sperm whale - *Physter macrocephalus*	2	1.9
Blue whale - *Balaenoptera musculus*	1	1.0
Minke whale - *Balaenoptera acutorostrata*	1	1.0
Unidentified cetacean	3	2.8
Total	105	99.9

Marine Mammal and Fisheries Interactions

Interactions between marine mammals and fishermen sometimes present difficult problems, both for the animals and the humans who depend on the available fish resources.

During some commercial fishing operations, marine mammals may be killed, injured, or harassed. On the other hand, marine mammals take or damage fish caught on lines or in traps and nets; they damage fishing gear during these encounters or when they accidentally become entangled; and, sometimes, they compete with fishermen for the same fish and shellfish resources.

Before the Act, various forms of harassment were used to control the distribution, abundance, and behavior of marine mammals. However, since the Act imposed a moratorium on these activities, animals in certain areas apparently have become more numerous and bolder in their interactions with fishermen and fishing gear.

Alaska Region and Northwest and Alaska Fisheries Center. The incidental catch of northern sea lions in the Shelikof Strait, Alaska, walleye pollock joint-venture fishery was studied by Center scientists to assess the nature and magnitude of the catch. Data were obtained by placing United States observers on foreign processing vessels. Dead sea lions from trawl nets were counted, sexed and measured, teeth were removed to determine age, and stomach contents were analyzed. Although the fishery has continued to expand in number of boats and estimated total catch (74,136 tons in 1982 to 171,539 tons in 1984), the estimated incidental catch of northern sea lions has declined (988-1,436 in 1982; 216-324 in 1983; and 237-355 in 1984). Of the sea lions processed, 73 percent were caught between 8 p.m. and 5 a.m., probably during net retrieval. Most of the sea lions caught were females ranging in age from 1 to 25 years old; 79 percent of the females were sexually mature and probably part of the reproducing population. Males were an average of 4.8 years old, and only 12 percent were old enough to obtain and defend territories. Analysis of stomach contents showed that the sea lions consumed pollock of the same size as that caught in the commercial fishery.

An explanation for the reduction in incidental catch of sea lions but an increase in catch and effort includes differences in the dates and location of the fishery and

modification of fishing techniques. The impact of this loss of sea lions on the Gulf of Alaska population is unknown, but the removal of sexually mature females from local populations could contribute to the declines that have been observed.

Northwest Region and Northwest and Alaska Fisheries Center. Since 1980, NMFS has contributed funds to the Washington Department of Game to study marine mammal-fisheries interactions in the Columbia River and adjacent waters. Partial support was provided by the Columbia River Estuary Data Development Program and the Marine Mammal Commission.

After three years of study, researchers found that marine mammal/fisheries interactions occurred in 62 percent of the salmon gillnet fishing trips in the study area (lower Columbia River, Grays Harbor, and Willipa Bay), and these interactions resulted in damage to fish catches, fishing gear, and/or marine mammals in 36 percent of all the fishing trips sampled. Harbor seals were the primary cause of fish damage in all estuaries and seasons. Since 1976, the harbor seal population in the study area has increased at an annual rate of about 22 percent. This increasing number of harbor seals and California sea lions may account for the increasing incidence of fisheries interactions problems being reported by Northwest fishermen.

Potentially significant marine mammal/fisheries interactions have been reported in other Northwest fisheries such as the salmon gillnet fisheries in Puget Sound. Commercial fisheries in the Northwest reporting interactions with marine mammals include salmon and herring gillnets, salmon and bottomfish troll, salmon and herring purse seine, bottomfish and shrimp trawl, bottomfish longline, crab pots, and salmon aquaculture facilities. Recreational fishermen also have reported fish and gear loss when fishing for salmon and steelhead.

The Northwest Region encourages fishermen to obtain Certificates of Inclusion to enhance their cooperation in submitting information on marine mammal/fisheries interactions. This effort has resulted in an annual roll of over 4,000 Certificate holders and has greatly increased the number of reports of interactions received from fishermen over past years.

There is an increasing concern, especially by private and public hatcheries, over the potential impact of pinnipeds on free swimming salmonids in rivers and estuaries. The seal-inflicted marks have been observed in coho and chinook salmon,

but no effort has been made to document the rate of incidence. Recent studies at a steelhead hatchery indicate that more than 30 percent of the returning steelhead had scars or scratches caused by pinnipeds. Since these represent only the fish that survived a seal predation attempt, there is concern over how many hatchery raised fish fail to return due to pinniped inflicted injuries or predation. Also, since these scarred salmonids are direct evidence of pinniped predation on free swimming salmonids, there is also concern over the potential impact of pinniped predation on wild stocks of salmonids, especially the depressed ones.

Southwest Region and Southwest Fisheries Center. The California Department of Fish and Game (CDFG) investigated marine mammal-fishery interactions under a joint contract from the Region and Southwest Fisheries Center. Reports from the Department described levels of incidental take of marine mammals in all State managed fisheries, specific observations on interactions in the shark drift gillnet fishery, and the results of acoustic harassment tests in the San Francisco Bay herring fishery, ocean salmon fishery, and southern California sport fisheries.

Researchers observed the incidental take of marine mammals by commercial fisheries (primarily the drift gillnet fishery for sharks and swordfish) and attempts to define fishing areas and level of fishing effort by each fishery. The State is developing and testing an acoustic harassment device and a taste-aversion procedure that uses chemical emetics to keep pinnipeds away from the catch of fishermen.

Although marine mammals, especially California sea lions, interact frequently with recreational fisheries, current regulations do not allow commercial passenger fishing vessels to harass marine mammals interacting with their passengers' catch. In response to a petition from the Sportfishing Association of California, NMFS has proposed to modify the definition of "commercial fishing operation" to include these vessels, issue new regulatory restrictions, and define new certification requirements. These proposed changes would establish the procedure necessary to permit operators of these vessels to legally take marine mammals in a non-lethal manner that would not injure them.

Northeast Region and Northeast Fisheries Center. Occasionally, marine mammals are taken incidentally to commercial fishery operations in the Gulf of Maine and in foreign fishing and joint fishery ventures in the Mid-

Atlantic. Marine mammal interactions with bottom gillnet operations for groundfish (cod, haddock, hake, cusk, pollock and spiny dogfish) in the Gulf of Maine usually result in little damage to gear or catch. However, entanglement of harbor seals, harbor porpoise, and other small dolphins has been reported. NMFS is funding studies to determine the extent and impact of marine mammals/fisheries interactions on both the marine mammal and fisheries populations in the Gulf of Maine. The University of Maine is studying the distribution and abundance, habitat use patterns, and population characteristics of harbor seals and harbor porpoise, and it is investigating the fisheries interaction problem for all marine mammal species in the Gulf of Maine.

Marine mammals are taken incidentally in foreign fishing and joint venture fisheries that use trawling gear for squid, mackerel, and butterfish in the Mid-Atlantic offshore waters. Pilot whales, common dolphins, and false killer whales are the most likely marine mammals involved. Observers from the Northeast Region are collecting data on the incidental take of marine mammals in foreign fishing ventures. The Region and Center are developing a data base program to monitor the incidental take and its effects, if any, on marine mammal populations.

Preliminary analyses of data suggest that the total take of marine mammals in fishery operations in the Northeast Region is not significant and does not seriously threaten the marine mammal populations. However, potentially significant interactions have been reported to the Region involving the entanglement of whales in fishing gear. So far, these interactions have involved fixed gear such as gillnets and lobster gear.

Law Enforcement

Law enforcement is necessary to the success of the marine mammal management program. The moratorium on taking marine mammals is enforced by special agents from NMFS and State agents under contract. NMFS has about 90 agents that participate in enforcement of the Act. During this reporting period, NMFS special agents spent 5,778 hours investigating illegal activities and responding to other requirements of the Act.

These agents initiated 193 investigations of alleged violations. Of these, 142 resulted in documented violations. These violations involved 28 unlawful takings or harassment of marine mammals. In addition, 105 seizures were made that involved 566 items.

NMFS special agents also investigate reports of stranded and beached marine mammals. Strandings occurred over the reporting period in record numbers, totalling 1,664 animals. In the Cape Cod Bay area, 127 pilot whales were stranded making 1984 the fourth consecutive year that mass strandings have occurred in this area.

NMFS special agents and State conservation officers cooperate to enforce the Act in most coastal states. NMFS currently has cooperative enforcement agreements or memoranda of understanding with Maine, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Delaware, South Carolina, Alabama, Louisiana, California, Oregon and Washington.

Legal Actions

Balelo v. Baldrige, (9th Cir.) Civ. No. 81-5807, 81-5806; United States v. $50,178.80, (9th Cir.) Civ. No. 82-5433. In this class action, commercial tuna fishermen challenged the Agency's statutory and constitutional authority to promulgate a regulation during the 1980 tuna/porpoise rulemaking allowing the Agency to require NMFS observers on board a tuna boat as a condition to obtaining a certificate of inclusion. In July 1981, the U.S. District Court for the Southern District of California held the regulation invalid because it sanctioned the use of observer gathered information for enforcement purposes. The Court found the regulation was beyond the Agency's statutory authority for these purposes, and, without statutory authorization, the pervasively regulated industry exception to the fourth amendment warrant requirement does not apply.

A three judge panel of the Ninth Circuit Court of Appeals went beyond the decision of the district court by finding the regulation invalid for all purposes including the collection of scientific data (which the district court had found allowable). However, the Government was granted a rehearing before a full panel of the Ninth Circuit which set aside the

decision made by a panel of three judges. This decision, issued by the Ninth Circuit on January 24, 1984, reversed the decision of the district court and held that the regulation was authorized under the broad rulemaking authority of the MMPA, and it fell within the prevasively regulated industry exception to the warrant requirement of the fourth amendment. The court affirmed the judgment in the companion case U.S. v. $50,178.80, a civil forfeiture action in which defendants' motion to supress observer collected evidence was denied by the District Court of the Central District of California.

Representatives of the tuna fishing fleet filed a petition for a writ of certiorari on the decision in Balelo on April 23, 1984. Opposition briefs were filed by the United States Government and intervenor-defendents Environmental Defense Fund, Inc. and the Defenders of Wildlife. The Supreme Court denied the petition on June 18, 1984, bringing the litigation to a close. NMFS has been able to resume its observer program because of this decision.

American Tunaboat Association v. Baldrige, (9th Circuit) Civ. No. 82-5588. In this action, the American Tunaboat Association (ATA) challenged the Administrator's refusal to follow the Administrative Law Judge's (ALJ) recommendations on three specific scientific findings in the Agency's final decision in the 1980 tuna/porpoise rulemaking held in conjunction with the ATA's application for a general permit. The case was brought even though the Agency authorized a quota of 20,500 porpoise for each of the years 1981-1985 and issued a general permit covering these years. The portions of the Agency's final decision challenged by the ATA were (1) whether the calculation of mean school size by the Agency should have used data obtained by agency observers aboard tuna boats, (2) whether an incorrect premise, that observers on aerial surveys could be expected to see all large porpoise schools on the trackline, was used in the agency's calculation of the density of porpoise schools, and (3) whether the area inhabited by porpoise was larger than the value used in the agency's analysis.

On March 10, 1982, the U.S. District Court for the Southern District of California entered an order declaring that the determination of the ALJ on the three disputed matters were the best available scientific evidence within the meaning of the Act and that the Administrator should have accepted them. The Agency appealed the decision of the district court to the Ninth Circuit Court of Appeals. The Ninth Circuit affirmed the district court opinion on July 14, 1984, holding that NOAA's

1980 regulations which set the porpoise quotas were unsupported by substantial evidence.

While both the trial and appellate courts found fault with the data utilized in the rulemaking, neither court expressly invalidated the regulations. The portion of the 1980 rulemaking which set quotas based upon the economic and technological feasibility of the tuna fishery was not challenged. Since it was the feasibility test which was used to establish the overall porpoise mortality quota of 20,500, the total allowable mortality remains unchanged even though quotas for some species are increased when the ALJ's determinations are used.

On July 17, 1984, amendments to the MMPA extended the ATA general permit and its terms and conditions, including the existing quotas. Additionally, quotas were provided for two previously prohibited species, the coastal spotted and eastern spinner dolphins. It is not expected that the decision in ATA v. Baldrige will affect the ongoing implementation of the tuna porpoise program. The decision, however, will have a bearing on the methodologies used in arriving at future estimates of population size.

International Fund for Animal Welfare v. Baldrige (D.D.C.) Civ. No. 84-1838. On May 30, 1984, the Department of Commerce contracted with the St. Paul Island native corporation, Tanadgusix Corporation, to conduct the 1984 harvest of North Pacific fur seals. The International Fund for Animal Welfare and other organizations sought to enjoin the harvest, alleging, among other things, a violation of the MMPA. The plaintiffs argued that the North Pacific fur seal is below its optimum sustainable population and, therefore, the MMPA prohibits a commercial harvest.

The U.S. District Court for the District of Columbia rendered its decision on June 28, 1984, consolidating the motion for a preliminary injunction with a trial on the merits. The court found that the commercial harvest, conducted under the authority of the Fur Seal Act (FSA), did not violate the MMPA.

Section 113 of the MMPA states that its provisions "shall be deemed to be in addition to and not in contravention of the provisions of any existing treaty, convention, or agreement, or any statute implementing the same, which may otherwise apply to the taking of marine mammals." The court found that under present conditions the MMPA contravenes both the Interim

Convention on Conservation of North Pacific Fur Seals and the FSA. If the MMPA were applicable, a harvest would be precluded since the fur seals are below their optimum sustainable population. However, the Convention and the FSA clearly grant the United States the right to conduct the harvest. Therefore, under Section 113 of the MMPA, the Convention and the FSA take precedence.

Jones v. Gordon (D. Alaska) Civ. J84-011. Plaintiffs, who included several whale watching tour operators, the Sierra Club and other environmental organizations, and the State of Alaska, challenged the issuance of a permit by NMFS to Sea World, Inc. for scientific research on up to 100 killer whales and permanent retention of up to 10 whales for purposes of public display and captive breeding. NMFS issued the permit under the MMPA after holding public hearings in Seattle and reviewing extensive public comments. In response to public concern and comments submitted by the Marine Mammal Commission, the capture of any killer whale was conditioned upon the results of preliminary research to be conducted by Sea World. Relying upon NOAA's National Environmental Policy Act (NEPA) Directive, which generally excludes scientific research and public display permits from environmental documentation requirements, NMFS determined that the preparation of an Environmental Assessment (EA) or Environmental Impact Statement (EIS) was unnecessary. Plaintiffs alleged that the issuance of the permit violated NEPA since no EA or EIS was prepared.

On January 16, 1985, the U.S. District Court for the District of Alaska determined that NMFS violated NEPA and declared the permit invalid and void. The court found that the venue and statute of limitation provisions which restrict judicial reivew of MMPA permits to a period of 60 days following issuance are inapplicable to a lawsuit brought under NEPA. In so ruling, the court determined that NEPA provided a basis of jurisdiction independent of the MMPA.

Sea World, which intervened as a defendant, unsuccessfully argued that there is a statutory conflict between the time constraints of the MMPA and NEPA. Although the MMPA mandates that action be taken on a permit application within 90 days of initial publication, the court ruled that this requirement presents no fundamental irreconcilable conflict with NEPA; NEPA can be satisfied by delaying initial notice of the application, by extending the comment period, or by modifying the timing of EIS preparation.

The court stated that most MMPA permits will qualify for the exclusion from NEPA in section 6(c)(5) of NOAA Directive 02-10, but the Sea World permit fell within the stated exceptions to the exclusion--i.e. that the permit was the "subject of public controversy based on potential environmental consequences" and would have "uncertain environmental impacts."

The court also rejected the Government's argument that the MMPA's permit procedures are the "functional equivalent" of NEPA review. The court narrowly construed the "functional equivalent" rule articulated in other cases, stating that it is inapplicable to NMFS which has a "far different mandate [to protect the environment] than the NEPA."

Defendants filed a notice of appeal on March 27, 1985.

American Cetacean Society v. Baldrige (D.D.C.) Civ. No. 84-3414. The United States and the Government of Japan exchanged letters on November 13, 1984, setting forth an agreement to phase out Japanese commercial whaling. Under that agreement, the United States would not certify Japan under the Pelly Amendment to the Fishermen's Protective Act or the Packwood-Magnuson Amendment to the Fishery Conservation and Management Act if, by December 13, 1984, Japan withdrew its objection to the International Whaling Commission (IWC) zero quota for sperm whales effective on or before April 1, 1988 and if, by April 1, 1985, Japan withdrew its objection to the IWC commercial whaling moratorium effective following the 1987 whaling season. On December 11, 1984, Japan withdrew its objection to the sperm whale quota in accordance with the agreement.

On November 8, 1984, the American Cetacean Society (ACS) and other organizations filed suit to enjoin Secretary Baldrige and Secretary of State Shultz from agreeing not to certify Japan for whaling activities which exceed IWC quotas. The U.S. District Court for the District of Columbia, on March 5, 1985, ruled in favor of the ACS and ordered the defendants immediately to certify Japan under the Pelly and Packwood Amendments. In so ruling, the court determined that the Secretary of Commerce has "a clear and nondiscretionary duty to certify the Japanese whaling in excess of the established IWC quotas" holding that such whaling necessarily diminishes the effectiveness of the IWC conservation program.

A stay pending appeal was issued by the U.S. Court of Appeals for the District of Columbia Circuit on March 18, 1985, and oral argument on the appeal was held in mid-May. In light

of the District Court order, Japan did not withdraw its objection to the IWC moratorium before April 1, 1985. Rather, under the terms of a modification to the November agreement, Japan is obligated to withdraw its objection within five days of a decision by the Court of Appeals in favor of the U.S. Government.

Right whale cow with calf in the Lower Bay of Fundy off Lubec, Maine. Photo by Scott Kraus, New England Aquarium, Boston, Mass.

PART II

INTERNATIONAL PROGRAMS AND ACTIVITIES

The Department of Commerce furthers the protection and conservation of marine mammals under existing international agreements and takes the initiative necessary to negotiate additional agreements required to achieve the purposes of the Act. NMFS participates in many international programs and activities to carry out this intent.

International Whaling Commision (IWC)

1984 IWC Meeting. The United States substantially achieved its primary objectives for the 36th Annual Meeting to continue efforts in the IWC to implement the moratorium decision on schedule and to work with other IWC members to provide for the continued functioning and adaptation of the organization in addressing its fundamental purpose of whale conservation.

IWC Moratorium Decision. The 36th Annual Meeting did not result in any changes in the moratorium decision made in 1982. A working group met to dicuss the comprehensive review called for by the moratorium decision. Also, the U.S. made a proposal regarding the need to consider possible adjustments in the manner in which the IWC conducts its business that will reflect the organization's continuing responsibilities after the moratorium is implemented.

The U.S.S.R., Japan, and Norway had exercised their rights under the Convention and filed an objection to the moratorium which removed any technical obligation under international law for these countries to comply. Lengthy discussions between the United States and Japan followed Japan's filing of objections to both the commercial whaling moratorium and the 1984-85 sperm whale ban. On November 13, 1984, the United States entered into an agreement with Japan designed to end all Japanese whaling no later than 1988. The Secretary of Commerce used his statutory authority under the Pelly and Packwood-Magnuson

Amendments to eliminate uncertainties and provide for an effective cessation of Japanese commercial whaling triggered by Japanese withdrawal of their objections.

On December 11, 1984, the Government of Japan withdrew its objection to the IWC sperm whaling prohibition, effective April 1, 1988. The Secretary then confirmed his commitment that given the withdrawal of the objection he would not certify Japan under the Pelly or Packwood-Magnuson Amendments for harvesting 400 sperm whales during each of the 1984 and 1985 seasons. The second provision outlined in the agreement was Japan's withdrawal of its objection to the moratorium by April 1, 1985, effective April 1, 1988. On April 5, 1985, in a letter to the Secretary of Commerce, Japan said it would withdraw its objection to the moratorium within 5 days if a decision by the U.S. Court of Appeals upholds the agreement.

The legality of this agreement between the United States and Japan has been challenged by several environmental groups (see Legal Actions).

Aboriginal Whaling. In 1982, after years of intensive work, the IWC adopted management principles and procedures to govern aboriginal subsistence whaling. They formally recognized in a separate management scheme the distinction between commercial and aboriginal subsistence whaling. The scheme codified the IWC's attempt to strike a proper balance between the needs of aboriginal people who depend on limited whaling to meet subsistence, cultural, and nutritional needs and the conservation needs of the affected whales. It requires that hunting be managed to provide for the recovery of depleted whale populations.

The Commission took no action to change the 1984-85 block quota of 43 strikes for the Bering Sea stock of bowhead whales, 22 of which were used in the spring 1984 harvest by Alaskan Eskimos. It recommended that catching effort be directed toward smaller immature animals (less than 13 meters in length) and that steps be taken to decrease the rate of animals that were struck but not landed. Only 11 whales were landed in the spring 1984 harvest.

The Commission agreed to request photographs of the dorsal area of gray whales landed in the Soviet Union for subsistence uses to compare with those obtained in the breeding areas of Baja California where there is no subsistence take. It also requested that Mexico and the United States provide estimates of current population size. Finally, it agreed to continue the

present catch limit of 179 gray whales for aboriginal/subsistence use.

With regard to western North Atlantic humpback and fin whales, the Commission adopted the Danish proposal to reduce the humpback catch limit from nine to eight, providing that if more than eight are killed in either 1985 or 1986, the catch in the succeeding year shall not exceed eight minus that excess, and to increase the fin catch limit from six to eight, provided, that the total catch in 1985 and 1986 does not exceed 16. An annual catch limit of 300 West Greenland minke whales was established again for 1985.

Commercial Catch Limits. The adoption of commercial whaling catch limits at the 36th Annual Meeting reflected the continued application of existing management procedures and a desire to allow interim catches by members who have accepted the moratorium but need time to identify and implement transition measures. The catch limits established (see Table 11 in Appendix) represent a 30 percent reduction from those agreed to the year before (from 9,390 to 6,623) and an 85 percent reduction from those in force in 1973.

Inter-American Tropical Tuna Commission (IATTC)

The Commission's efforts to collect data on the tuna-porpoise interaction by sampling purse seine trips have been hampered in recent years by the changes in fishing patterns and the temporary exodus from the area of a large number of vessels. In 1984, the Commission staff designed a new scheme that should increase the number of purse seine trips sampled. Of the 29 trips scheduled for 1984, 11 were non-U.S. Arrangements have not been concluded with Mexico to deploy Commission observers on its flag vessels. However, during the Commission meeting, the Mexican delegation indicated that efforts were continuing to remove the internal obstacles to Mexican participation in the program.

The estimates of mortality in 1984 are only available for the U.S. fleet. While the amount of tuna caught on porpoise through August is somewhat lower than for about the same period in 1983 (19,150 tons as compared to 28,433 tons), the kill rates estimated from IATTC data are greater than those for 1983.

The Commission is investigating the factors that affect kill rates, in part because of differences between IATTC data and data collected by NMFS observers. These factors include latitude, season, wind speed, and vessel capacity. A proper stratification scheme based on time and area would improve the mortality estimates, and the data from both NMFS and IATTC could then be safely combined. It appears that the mortality for all species can be quite localized and that areas of vulnerability can be defined. Also, the intensity of the fishery is a factor to be taken into account. Exploitation by encircling the animals disperses them into smaller groups and mortality tends to decline as a result. Animals subjected to fewer sets may have higher mortality rates suggesting that the adaptation of the animals helps to reduce mortality rates.

To improve vessel procedures and thus reduce porpoise mortality, the IATTC staff has been studying the use of lighting systems by vessels to illuminate the backdown channel at night. The Commission has continued to loan high-intensity floodlights to vessels for use during dark backdown sets which have a much higher porpoise mortality rate than daylight backdown sets. In sets where floodlights were used, kill-per-set rates appear to have been significantly reduced.

International North Pacific Fisheries Commission (INPFC)

The United States and Japan signed a new Memorandum of Understanding (MOU) on marine mammals in 1984 which will remain in effect until June 1987. As with the two previous MOUs signed between the two countries, the agreement provides for cooperative research on Dall's porpoise and other marine mammals incidentally caught in the Japanese high-seas salmon fishery. The MOUs were developed in connection with the International Convention for the High Seas Fisheries of the North Pacific Ocean.

At the November 1984 annual meeting of the INPFC, the scientific subcommittee on marine mammals and U.S. and Japanese scientists presented 23 documents which included studies on marine mammals incidentally caught in the high-seas salmon fishery, gear modification experiments, acoustic studies, estimation of abundance of Dall's porpoise, and the biology and behavior of Dall's porpoise. Based on observations in the

Japanese mothership salmon fishery, U.S. scientists estimated that in 1984 this fishery incidentally caught 2,443 Dall's porpoise in the U.S. fisheries conservation zone and 3,355 porpoise in all other areas of its operations.

North Pacific Fur Seal Commission (NPFSC)

The NPFSC held its 27th Annual Meeting in Moscow, U.S.S.R. in April 1984. The Commission focused its attention on the declining population of fur seals on the Pribilof Islands. The seals are currently declining at a rate of 4 to 8 percent annually. The scientists of the Standing Scientific Committee provided all available information to the Commission on possible causes of the fur seal decline. The decline is not thought to be caused by the harvest of sub-adult males. Rather, the female harvests during the 1960s and increased mortality of seals at sea appear to be the significant factors in the recent population decline. The causes of seal mortality at sea remain uncertain, but include deaths from entanglement in floating debris, primarily net fragments and plastic packing bands. The NPFSC agreed to continue its efforts among countries fishing in the North Pacific to reduce the discarding of debris at sea.

In an effort to combat the problem of entanglement as one way of addressing the larger issue of population decline, the United States is taking steps to prevent the discard of debris and gear. The International North Pacific Fisheries Commission and the North Pacific Fishery Management Council are considering revisions of both domestic and foreign regulations.

On October 12, 1984, the four Party Governments, Canada, Japan, the Soviet Union, and the United States, signed the 1984 Protocol Amending the North Pacific Fur Seal Convention and a Statement of Concerns which is attached to the Protocol. The Protocol extends the Convention for 4 years until 1988. The Statement notes the concerns of the Party Governments over several issues, especially the recent decline of the fur seals. The Protocol is currently undergoing ratification procedures within the United States and each of the other party Governments.

US-USSR Marine Mammal Project, Environmental Protection Agreement

This project promotes joint research and exchange of information by U.S. and Soviet scientists on the biology, ecology and population dynamics of marine mammals of concern to both countries. In 1984, joint research and exchange visits involved 12 scientists for laboratory and museum studies, a workshop on sea otter biology, and a walrus-ice seal cruise to the northern Bering Sea.

In March, two Soviet scientists studied osteological specimens of seals and walrus at the Smithsonian Institution, Washington, D.C., Museum of Comparative Zoology at Harvard, American Museum of Natural History in New York City, and Carnegie Museum in Pittsburgh.

In March and April, two other Soviet scientists worked with American colleagues at Hubbs-Sea World Research Institute and the NMFS Southwest Fisheries Center. These studies were continuations of ongoing morphological studies including small cetacean and pinniped color pattern variation and analyses of metrical and non-metrical characters in species of dolphins.

The first part of a joint walrus-ice seal cruise took place on board a Soviet sealer/trawler in the northern Bering Sea during November-December. Research included obtaining blood samples, specimens for virology and other disease studies, reproductive tracts for pregnancy rates and teeth for ageing studies. A total of 137 walrus and 2 bearded seals were taken during this part of the cruise. The second half of the cruise is scheduled for February to mid-April 1985.

In April and May, a NMFS scientist worked with Soviet colleagues studying ageing techniques for cetaceans at the N.K. Kolpzoff Institute for Developmental Biology, U.S.S.R. Academy of Sciences, Moscow.

California sea lion pups are weighed and tagged on San Clemente Island, California. Photo by Dana Seagars, NMFS.

PART III

MANAGEMENT AND RESEARCH PROGRAMS

Alaska Region and
Northwest Region (Management)
National Marine Mammal Laboratory
Northwest and Alaska Fisheries Center (Research)

Bowhead Whales. Although bowhead whales are listed as an endangered species, Alaska natives are allowed to hunt them for subsistence purposes. Catch limits for the hunt are set by the International Whaling Commission and regulations for management of the harvest are implemented under the Whaling Convention Act of 1949. The strike quota for 1984 and 1985 was set at 43 with no more than 27 strikes allowed in either year. Of these, 22 were used during the spring hunt and 3 were used during the fall hunt. The remaining 18 strikes are available to be used during the 1985 season. During the spring hunt, 11 whales were landed; one was landed during the fall hunt. NMFS-based enforcement agents were in Gambell/Savoonga, Point Hope and Barrow during the spring hunt and in Kaktovik during the fall hunt.

Although NMFS is the Federal agency with primary responsibility for bowhead whales, several other agencies including the State of Alaska, the Alaska Eskimo Whaling Commission, the North Slope Borough, and the Department of the Interior, are concerned with their protection. Research into the status of the bowhead whale population including studies of population size and recruitment, seasonal distribution and migration, and behavior relative to the availability of food or human disturbance, are carried out by NMFS, its National Marine Mammal Laboratory, the Minerals Management Service and the North Slope Borough (Alaska).

Annual Quotas and Catch of Bowhead Whales 1978-1984

	Quota[1]		Actual Take		
	Landed	Strikes	Landed	Lost	Strikes
1978	14	20	12	6	18
1979	18	27	12	15	27
1980	18	26	16	18	34
1981[2]	17	32	17	11	28
1982	16	19	8	11	19
1983	18	18	9	9	18
1984	-	27[3]	12	13	25
1985	-	18			

[1]Quotas were first set for this population in 1978. Since 1982 a landed whale counts against the strike quota. Hunting is to cease when the quota of total strikes including landed whales is reached.

[2]Based on IWC quotas, totals for 1981, 1982, 1983 combined could not exceed 45 landed or 65 struck.

[3]A two-year quota not to exceed 43 strikes was put into effect at the July 1983 IWC meeting. A domestic limit of 27 strikes was set for 1984 consistent with the IWC decision.

Humpback Whales. A portion of the Northern Pacific population of humpback whales (about 1,200 animals) spend the summer in Glacier Bay National Park and Preserve and other areas in southeast Alaska. Most of the North Pacific population winters in the waters around the main islands of Hawaii. Activities in both areas including commercial and recreational vessel traffic, offshore oil and gas development, sport and commercial fisheries, and coastal development may threaten this species.

In Alaska from 1967 to 1977, an average of 20 to 25 humpback whales were observed each year in Glacier Bay National Park and Preserve. In 1978 and 1979, the number appeared to decrease, and it was thought that increasing vessel traffic might be partially responsible. In 1980, in consultation with NMFS, the National Park Service established regulations to restrict vessel traffic to 1976 levels. In 1981, Congress appropriated special funds to the National Park Service to address the problem, and the Service gave a portion of the funds to NMFS to carry out the studies. However, since humpback whales are using the Bay in increasing numbers and since research studies have not found any evidence linking vessel traffic with the decrease in use in 1978 and 1979, the National Park Service is proposing a 12 to 14 percent increase above the 1976 level for vessel traffic into the Park. Studies made by NMFS indicated that the decrease in use of the Bay by humpback whales was probably related to the amount of food available in the Bay.

During 1984, the Alaska State legislature voted to study the feasibility of using jetfoils to supplement the Alaska State Ferry System. Because of the potential for collisions with humpback whales, the Alaska Department of Transportation placed observers aboard the jetfoil to monitor the presence of whales. No collisions were reported during the 90-day trial period. Most whales were spotted near the coastline out of the path of the jetfoil.

Dall's Porpoise. Marine mammals, primarily the Dall's porpoise, are taken during commercial gillnet operations by Japanese fishing vessels both in and out of the U.S. fishery conservation zone (FCZ) in the North Pacific Ocean and Bering Sea. Under a permit issued by NMFS, the Japanese salmon mothership fishery may take up to 5,500 Dall's porpoises annually inside the FCZ. Based on our observer records, we estimate that the total take in 1984 was 2,443 animals inside the FCZ.

In 1984, NMFS monitored the incidental take by the Japanese with U.S. observers aboard catcherboats while the mothership fleets operated inside the FCZ and observers from Japan Fisheries Agency aboard catcherboats both inside and outside the FCZ. Observers also collected data on the incidental take of chinook salmon and steelhead trout during gillnet operations and on seabird entanglements. A cooperative research program that began in 1982 with the U.S. Fish and Wildlife Service on the incidental take of seabirds during this fishery continued in 1984.

Scientists from the NMML are continuing the research programs initiated in 1978 under the MOU and the MMPA general permit. In 1984, a U.S. biologist was on board each of the Japanese salmon motherships to collect biological samples and data from all incidentally taken marine mammals returned to the motherships. Japanese nationals collected samples from porpoises taken north of the FCZ. A study was made in Prince William Sound, Alaska and offshore waters of the Western North Pacific on the response of Dall's porpoise to a survey vessel. This field work is part of a study begun in 1982 to better determine the population abundance.

Northern Fur Seals. Under 1983 amendments to the Fur Seal Act, the Federal Government has been relieved of many responsibilities in the Pribilof Islands. However, responsibility for administration of seal rookeries and oversight of the annual seal harvest remains with NMFS. The Pribilof Islands Program, which was responsible for administration of the Pribilofs including fur seal management, was phased out in 1984 and the remaining fur seal management responsibilities were transferred from the NMFS Northwest Region to the Alaska Regional Office.

During 1984, the harvest was carried out under contract with the Tanadgusix Corporation. Based on a recommendation by the North Pacific Fur Seal Commission, the Department of Commerce set a cap of 22,000 on the harvest. During the five-week harvest period, 22,066 seals were taken. Almost all were 2 to 5 year old subadult males.

The moratorium on commercial seal harvesting continued on St. George Island where 350 subadult male seals were taken during the subsistence harvest which is allowed on the Island. Several thousand pounds of seal meat resulting from the St. Paul Island harvest were shipped to St. George Island to supplement this take.

Biological information collected by the NMML on fur seals of the Pribilof Islands of St. Paul and St. George included determining the age of fur seals harvested, the number of adult males on the rookeries and hauling grounds, and the number of pups and older seals that died on the rookeries and adjacent beaches. In 1984, approximately 173,100 pups were born on St. Paul Island.

Behavioral research on St. George Island continued to emphasize key behavioral parameters associated with changes in adult sex ratio. A new study on the relationship of adult

males to pups was begun, and surveys were made to determine the number of adult females entangled in fishing debris. A study on the behavior of nonbreeding adult males was begun and a study of female gregariousness and agression was completed. More measurements were made of diving behavior. Juvenile males were censused weekly. Over 100 adult females were marked for a study of pregnancy and mortality rates.

In 1984, the Humane Society of the United States, on behalf of several other groups, petitioned NMFS to add the North Pacific fur seal to the U.S. List of Endangered and Threatened Wildlife. In response, NMFS reviewed the status of the fur seal to determine if the petitioned action was warranted. Based on that review, current population estimates, and the implementation of various Federal and international measures to conserve the species, NMFS determined that the proposal to list the North Pacific fur seal as a threatened species is not warranted at this time.

Southwest Region (Management)
Southwest Fisheries Center (Research)

Porpoise* Taken Incidentally in the Yellowfin Tuna Fishery. During 1984, the Southwest Region fielded 27 tuna/porpoise observer cruises aboard commercial tuna purse-seine vessels. Of these, sixteen were fielded through the porpoise/tuna research program of the Inter-American Tropical Tuna Commission (IATTC), and 11 were fielded by NMFS. Legal complications early in the year reduced the expected number of observer trips.

The Region made net and gear inspections aboard 42 U.S. tuna seiners to ensure the presence of porpoise safety gear. Assistance was also provided in the alignment of newly-

*NMFS uses the term porpoise, rather than dolphin, to prevent confusion with the dolphin fish, an object of sport and commercial fishing. However, the common name is used when discussing individual species or stocks such as an eastern spinner dolphin.

installed aprons for two vessels working out of San Diego in conjunction with IATTC and Porpoise Rescue Foundation personnel. The Region held Tuna Seiner Operator's Workshops for eight skippers and issued 71 Operator's and 34 Vessel Certificates.

The Center continued its tuna-porpoise research program which is concerned with understanding the population biology of porpoises associated with the U.S. purse-seine fishery for tunas in the eastern tropical Pacific Ocean (ETP). The Center completed a review of the research related to the status of stocks of porpoise and planning for an expanded program to monitor their abundance using research vessels and aircraft. A total of 27 manuscripts documenting results of analyses and 10 reports of panel meetings were completed.

In its 1984 reauthorization of the MMPA, Congress called for an expanded stock monitoring program. The Center is designing a program to use research ships to collect data for monitoring population size. Factors addressed in developing the design include season, survey area, stratification of area, and allocation of searching effort to strata. The number of ships required, use of helicopters to augment data collection and interpretation, and consistency of survey methods are being considered. Analytical models incorporating these factors are being developed and used to determine levels of precision required to detect different levels of population decline. A review panel of scientists from the Marine Mammal Commission, the Inter-American Tropical Tuna Commission, the Porpoise Rescue Foundation, the Environmental Defense Fund, and North Carolina State University, assisted the Center in reviewing the results of models. Based on the panel's advice, the Center will prepare a design for monitoring ETP dolphin stock abundance with research vessels.

Biological research on ETP dolphins continues on age determination and growth, reproduction, bioenergetics and stock structure. The validity of growth layer groups in teeth is being tested using known age and tetracycline labeled specimens. Teeth from females are being examined for parturition marks and other layers that might be used to estimate frequency of pregnancy. The possibility of segregation of spotted dolphins into juvenile breeding schools is being investigated by examining age, sex and color patterns in sample schools. Computer simulation models are being developed to compare the bioenergetics of spotted dolphin and yellowfin tuna in the ETP as part of an investigation to identify the basis for the tuna-dolphin association and work is

progressing using mitochondrial DNA sequences to study structures of racial stocks of ETP dolphins.

Bottlenose Dolphin. The Center continued population studies on 240 bottlenose dolphins that inhabit the waters offshore San Diego county. Many of the individual dolphins are recognizable from distinctive scar patterns on their dorsal fin. Using this trait, a study on the schooling behavior of the animals was completed during April 1984 in cooperation with student interns from Southhampton College, New York. An extension of this study in cooperation with San Diego State University addresses possible exchange between bottlenose dolphins of northern Baja California, Mexico and southern California.

In June 1984, the Center held a workshop on the status of bottlenose dolphins off southern California. Participants included researchers, managers, and other interested individuals from both private and government organizations. A report on the workshop proceedings is in preparation.

Harbor Porpoise. The Center organized a cooperative harbor porpoise survey with the National Marine Mammal Lab, the Southwest Region, and the California Department of Fish and Game. The survey was made using the NOAA vessel, David Starr Jordan, and a State-owned aircraft. The Jordan operated one to two miles from the coast searching from Point Conception, California to the Canadian border. The aircraft operated closer to shore surveying much of the same area as the Jordan. About 300 schools of harbor porpoise were observed. A report of results of the survey is in preparation. A second survey is planned for 1985.

Humpback Whale. The Southwest Region is responsible for humpback whales when they winter in the Hawaiian Islands. A Notice of Interpretation issued by the Region in 1979 for the "taking by harassment" of humpback whales in the Hawaiian Islands remains in effect. NMFS enforcement agents monitored whale watching and research activities around Maui, and press releases issued on all of the main islands included guidelines for humpback whale watching.

As part of the management program for humpback whales, the Region's Western Pacific Program Office (Honolulu) conducted consultations under Section 7 of the Endangered Species Act. Federal projects were reviewed and recommendations were made to ensure that associated activities would not jeopardize the continued existence of humpback whales.

Pilot Whale. Since there is an occasional incidental take of pilot whales during the commercial fishery for squid off southern California, the Center continued a monitoring program started in 1980. The Center completed two aerial surveys and one vessel survey directed at assessing interactions of pilot whales around Santa Catalina Island. The vessel survey resulted in only one sighting of ten animals. Aerial surveys resulted in one sighting of 12 animals during December, and three sightings totaling 58 animals during January. The University of California at Santa Cruz, under contract to the Center, studied movement patterns and reproductive behavior of the pilot whales around Santa Catalina Island. This study which uses markings on individual animals as natural tags should be completed in 1985.

Seals and Sea Lions--California Coast. The California Department of Fish and Game, under contract to the Southwest Region and Fisheries Center, continued to assess the status of the harbor seal population in California, the mortality of marine mammals in commercial fisheries, and the effectiveness of several non-lethal harassment devices designed to reduce marine mammal-fisheries interactions. NMFS will use data from the harbor seal population surveys to assess the status of this population.

Legislation establishing the Channel Islands National Park instructed the Departments of Interior and Commerce to cooperate in the Park planning processes that concern marine mammals, and also directed them to cooperate in the development of a Natural Resources Study. The Region and the Center have developed management and research plans for pinniped populations in the Park in consultation with the National Park Service, the State of California, and the Office of Coastal Zone Management. A report on the status of the pinniped populations in the Park, including a discussion of population dynamics, management concerns, information needs, and an updated literature review was prepared by the Region as the NMFS contribution to the National Park Service Second Biennial Report to Congress on the status of the natural resources in the Park.

The Region analyzed the literature from 1850 to the present to describe long-term trends in the use and location of California and northern sea lions rookeries in the southern California Bight. The analysis will be used to monitor and assess trends in sea lion distribution.

The Center continued to participate in a cooperative study of coastal populations of pinnipeds. This research includes monitoring trends in population levels and assessing the impact of the incidental kill of marine mammals in commercial fisheries. During June and July, counts of pups were completed at all major rookeries; about 900 pups were sexed, tagged, and weighed, and during September samples were collected to analyze food habits. Also, procedures to keep pinnipeds from taking fish caught by recreational and commercial fishermen were tested using acoustic devices and fish laced with a chemical emetic.

Harbor Seals. Under a contract from the Region and Center, the CDFG surveyed the California coast and offshore islands to census harbor seals. Since previous studies indicated that the greatest number of harbor seals was observed along the coast during the June molting season, the survey was conducted at that time. Counts from photographs were verified by comparison with counts made by shore-based observers stationed at haul-outs along the coast. The 1984 estimate of the California population was over 18,200 animals, comparable to estimates made in each of the past three years.

A study to determine movement patterns and effects of disturbance by vessels on haul-out behavior of harbor seals was begun in June 1984. At Santa Rosa Island, 12 harbor seals were captured and tagged with radio transmitters.

Northern Elephant Seals. The Center conducted research on northern elephant seals at San Clemente and Santa Barbara Islands, at San Nicolas Island (in cooperation with Hubbs-Sea World Research Institute), and at San Miguel Island (in cooperation with HSWRI and NMML). Additional work was conducted at the Farallon Islands through a contract to the Point Reyes Bird Observatory. At each of the rookeries, pup counts were made in February and March to monitor changes in population levels. Also, animals were tagged to determine movements and estimate various life history parameters. About 1,700 pups were tagged at the four major Southern California rookeries. Researchers collected stomach contents of elephant seals on San Miguel Island for a food habits study.

Guadalupe Fur Seal. In January 1985, NMFS proposed to list the Guadalupe fur seal as threatened under the Endangered Species Act. NMFS will evaluate the comments received regarding this proposal and plans to make a final listing determination in 1985.

Hawaiian Monk Seal. The Southwest Region is implementing a Recovery Plan for the monk seal that was prepared under a requirement of the Endangered Species Act. NMFS has proposed to designate as critical habitat all beach areas, lagoon waters, and ocean waters out to a depth of 10 fathoms around Kure Atoll, Midway Islands (except Sand Island), Pearl and Hermes Reef, Lisianski Island, Laysan Island, French Frigate Shoals, Gardner Pinnacles, Necker Island, and Nihoa Island. A final decision will be made in 1985.

The Region's Western Pacific Program Office consulted with other Federal agencies to ensure that Federal projects and associated activities would not jeopardize the continued existence of Hawaiian monk seals.

Research on the Hawaiian monk seal is carried out by the Honolulu Laboratory of the Southwest Fisheries Center. In 1984, pups were tagged at all northwestern Hawaiian Island locations as part of a continuing study of age-specific survivorship, age at first reproduction, and inter-atoll movement. First-year survivorship was 88 percent at Lisianski Island and about 90 percent at Laysan Island.

At Kure Atoll, six pups (including two females) were born. The two female pups were maintained throughout the summer in a protective enclosure in the "headstart" program which was initiated in 1981. Resightings of these females and other females previously maintained confirmed that 9 of 10 were alive at the end of the year. The four male pups were tagged and released, and one was found dead in November.

In 1984, underdeveloped pups were collected for the first time from French Frigate Shoals for rehabilitation and release at Kure. Underdevelopment may result from an exchange of pups of disparate ages between nursing females. Six of these pups, some as small as one-third of normal weaning weight, were temporarily maintained at the Waikiki Aquarium or the Honolulu Laboratory's Kewalo Research Facility. One has been released, four are currently being screened for parasites and diseases, and one animal died due to a severe heart defect.

At Laysan Island, the Center identified males responsible for attacks on adult female and immature seals. In October, nine males were removed from Laysan and taken to Johnston Atoll, about 600 miles south of Laysan. These animals were bleached and tagged so they will be identifiable should they return to the Northwestern Hawaiian Islands.

The number of seals at French Frigate Shoals are no longer increasing; however, the number using Tern Island continues to increase although successful pupping has not occurred there. In January 1984, several emaciated juvenile seals were found dead, suggesting that some young seals may find insufficient food to survive the post-weaning period when they are learning to feed.

Midway Island Wildife Management. The Region has agreed with the Navy (which operates a Naval Air Facility at Midway Island) and the Fish and Wildlife Service to cooperate with one another in managing wildlife resources at Midway Island. Species under NMFS jurisdiction include the Hawaiian monk seal and bottlenose and spinner dolphins.

Entanglement Workshop. NMFS co-sponsored a workshop held in Honolulu in November 1984 to examine the problem of marine mammals, birds, turtles and fish becoming entangled in lost and discarded fishing gear and other debris.

The Workshop on the Fate and Impact of Marine Debris was organized under the leadership of the Director of NMFS' Honolulu Laboratory. The workshop reviewed the existing conventions, laws and regulations that could provide a legal framework for dealing with the problem. Papers were presented on the source and quantification of marine debris; its impact on marine mammals; and the fate of marine debris in the world's oceans. A fourth session focused on identifying management needs. The participants in the four working groups met to discuss the issues presented in the papers and agreed that a serious problem exists which is affecting marine organisms throughout the world. Also, they concluded that a variety of scientific, technical, legal, and procedural actions can be taken to address the issues. The workshop proceedings, including recommendations made by the working groups, will be published in the spring of 1985.

Other sponsors included the Marine Mammal Commission, the Fish and Wildlife Service, the North Pacific Fishery Management Council, the Pacific Fishery Management Council, Pacific Sea Grant College Programs, and the Western Pacific Fishery Management Council.

Southeast Region (Management)
Southeast Fisheries Center (Research)

Atlantic Bottlenose Dolphin. Bottlenose dolphins are taken from a number of localities along the southeastern coast of the United States for public display and scientific research. To assure that these live-captures and removals do not have a significant adverse effect on local populations or the species as a whole, NMFS limits the number of animals that can be taken from given areas.

The Southeast Region regulates the taking of these dolphins under permits. Permit holders must coordinate all takings with the Regional Director. Taking is only authorized from areas where populations have been assessed and when there are sufficient numbers to allow a quota. Permit holders may collect in these areas when authorization has been granted by the Regional Director and only until the following quotas are reached.

Mississipi Sound	35
Indian/Banana River Complex (Florida)	6
Texas Coast-Corpus Christi/Matagorda Bay	17
West Coast of Florida (between Crystal River and Charlotte Harbor, including Tampa Bay)	23
Florida Panhandle (between Crystal River west to Mobile Bay, Alabama)	10

The number of bottlenose dolphins removed during any calendar year cannot exceed two percent of the minimum population in a specific location.

The Southeast Fisheries Center assesses and monitors the status of local populations or subpopulations from which removals are made. The goals of the Center's research on bottlenose dolphins are (1) to provide estimates of the abundance and live-capture quota recommendations for the stock(s); (2) to determine the dynamics and discreteness of along-shore and inshore-offshore populations; and (3) to determine the validity of the 2 percent live-capture quota rule. One of the Center's research programs is designed to

determine whether the authorized removal of 35 animals will have any effect on the ratio of marked to unmarked dolphins seen during monthly boat surveys of a designated capture area in Mississippi Sound. If the ratio increases, it will indicate that there is a relatively discrete bottlenose dolphin population in the area, that annual removal of 35 or more animals could result in a serious population decline, and that the authorized level of take should be further limited.

Northeast Region (Management)
Northeast Fisheries Center (Research)

Whale Watching. The Region is concerned about increased commercial and recreational vessel activity in the vicinity of endangered whales. The rapid increase in whale watching activities in New England waters and the accompanying potential for adverse effects to endangered species and their environment is being addressed through management, enforcement, and research efforts. In coordination with whale watch industry representatives, scientists, and environmental organizations, the Region has developed and distributed whale watch guidelines for specific use in New England waters. Also, the Region and Center will publish a brochure that includes NMFS' whale watch guidelines. The brochures will be given to private boaters, whale watchers, and the general public. Selected use of enforcement efforts and investigation of research methods to determine the cumulative effect of these activities on marine mammals will complete the coordinated approach to this problem.

Whale Research. The Northeast Region and Center and the Southeast Region and Center are developing a joint marine mammal research plan for large whales based on research and management needs shared between the two regions. These efforts will guide future coordinated research efforts on large whales in the two Regions.

In February 1985, the Marine Mammal Commission (MMC) and the Northeast Region sponsored a workshop to assess and describe research and management needs and priorities for right whales in the western North Atlantic Ocean. Participants identified the steps necessary to fill data gaps and reduce potential threats from human activities and monitor the size, growth, and essential habitats of this population of right whales. The Commission will develop a management/research plan

which will be used by NMFS to set priorities and coordinate research needs and efforts for the recovery of the right whale and to guide other Federal agencies in carrying out their responsibilities under the Endangered Species Act.

The Center funded several marine mammal studies including the following:

Whales

- Collection of skin samples to determine the sex and population discreteness of humpback whales in the North Atlantic.

- The continued use of Northeast Fisheries Center ships as a platform of opportunity for observers from the Manomet Bird Observatory to gather and maintain seabird, marine mammal, and sea turtle sightings of all species between Nova Scotia and Cape Fear, North Carolina.

- Collection and maintenance of a humpback whale fluke photographic catalogue to identify individual animals.

- A review of 26 years of observation data on marine mammals. This analysis will compare present day large cetacean behavior to vessel (e.g., whale watching, fishing, merchant, etc.) traffic and human activity to past behavioral responses. From these observations, it may be possible to better understand the behavior of whales when they are near vessels and to predict the future effects of human activities on marine mammal populations.

- Aerial photographs to estimate right whale population size and residency times in the Great South Channel, Gulf of Maine. The Great South Channel is believed to be one of the main migration corridors used by right whales entering the Gulf of Maine in the spring.

- Studies to define the habitats most used by right and humpback whales in the Cape Cod Bay/Stellwagen Bank region. These areas will be surveyed to determine the biological, chemical, and physical characteristics that make these areas preferred by right and humpback whales. Social interactions, sex ratios, and cow/calf pairs will be documented.

- An analysis of 500 hours of observations collected from Mount Desert Rock in the Gulf of Maine on respiration rates of undisturbed baleen whales.

- A documentation of the incidental take of harbor porpoise in New England groundfish gillnets and an evaluation of the economic loss to fishermen and means for reducing conflicts. This study, taking place in the Gulf of Maine, will also include examining incidentally taken animals to determine age, sex, reproductive condition, food habits, and parasite loads.

Seals and Sea Lions

- Continuing study by the University of Maine on marine mammals/fishery interactions in the Gulf of Maine. Researchers will assess the impact of the incidental take of harbor seals in New England groundfish gillnets. Dead animals will be examined to determine their biological characteristics, and means of reducing conflicts will be evaluated.

- Aerial surveys of the overwintering harbor seal population in Southern New England waters. Researchers at the Manomet Bird Observatory will use these population counts to assess population changes and consumption estimates.

Whale watchers view a humpback whale on Stellwagen Bank off Gloucester, Mass. Photo by Mason Weinrich, Cetacean Research Unit, Gloucester Fishermen's Museum.

PART IV

APPENDIX

TABLE 1: 1985 GENERAL PERMIT AND SMALL TAKES-COMMERCIAL FISHING INCIDENTAL TAKES-REQUESTS AND AUTHORIZATION

FCZ/Applicant/Category		Otariidae						Phocidae				Cetacea		Total	
ATLANTIC OCEAN (inside U.S. FZC)		Northern sea lion		Northern fur seal		California sea lion		Harbor seal		Elephant seal					
		(Requested	Authorized	Requested	Authorized	Requested	Authorized)	(Requested	Authorized	Requested	Authorized)	(Requested	Authorized)	(Requested	Authorized)
Domestic--New England Groundfish Gillnetters--ST		0	0	0	0	0	0	100	50	0	0	250f/	230	350	280
Domestic--Menhaden Purse Seiners	ST	0	0	0	0	0	0	0	0	0	0	50	33	50	33
Japan	I	5	0	0	0	0	0	5	5	0	0	20	15h/	30	20
Portugal	I	0	0	0	0	0	0	20	20	0	0	20	20g/	40	40
German Democratic Republic	I	0	0	0	0	0	0	8	8	0	0	10	10g/	18	18
Spain	I	0	0	0	0	0	0	20	5	0	0	20	10g/	40	15
Italy	I	0	0	0	0	0	0	20	5	0	0	20	15g/	40	20
Netherlands	I	0	0	0	0	0	0	5	5	0	0	15	15g/	20	20
U.S.S.R.	I	0	0	0	0	0	0	5	5	0	0	10	10g/	15	15
PACIFIC OCEAN (inside U.S. FCZ)															
Domestic (NPFVO)															
	I	),000	1,000	10	10	0	0	10	)0	0	0	10	10	),030	1,030
	III	500	300	5	5	0	0	200	200	0	0	10	10	715	515
	IV	20	20	5	5	0	0	5	5	0	0	0	0	30	30
	V	1,000	750	10	10	0	0	1,800	1,200	0	0	200a/	100	3,010	2,060
Domestic (PCFFA)															
	I	10	)0	5	5	20	20	10	10	10	10	0	0	55	55
	III	0	0	0	0	100	100	25	25	0	0	60	50b/	185	175
	IV	0	0	0	0	15	15	5	5	0	0	0	0	20	20
	V	50	50	10	)0	1,700	1,700	700	700	50	50	45	30c/	2,555	2,540
Domestic (Hawaii)		0	0	0	0	0	0	0	0	0	0	H	H	0	0
Japan															
Deepsea	I	90	90	5	5	0	0	20	20	0	0	0	0	115	)15
Hokuten	I	45	45	5	5	0	0	5	5	0	0	0	0	55	55
Longline	V	0	0	0	0	0	0	0	0	0	0	H	H	0	0
Salmon	V	25	25	450	450	0	0	0	0	0	0	5,600	5,500d/	6,075	5,975
Republic of Korea	I	100	95	0	5	0	0	100	25	0	0	50	5e/	250	130
Portugal	I	40	40	0	0	0	0	20	20	0	0	20	20e/	80	80
Poland	I	90	40	0	0	0	0	70	15	0	0	55	20e/	215	75
U.S.S.R.	I	35	35	0	0	)5	15	45	45	0	0	30	30	125	125
Totals		3,005 Pacific 5 Atlantic	2,500 Pacific 0 Atlantic	505	510	1,850	1,850	3,015 Pacific 183 Atlantic	2,285 Pacific 103 Atlantic	60	60	6,080 Pacific 415 Atlantic	5,775+ Pacific 358 Atlantic	14,515 Pacific 603 Atlantic	12,980 Pacific 461 Atlantic

NOTES:

e/ Dall's porpoise, harbor porpoise, and beluga whale.

b/ Pilot whales (30), harbor porpoise (0), Dall's porpoise (5), common (5), whitesided (5) and bottlenosed dolphins (5).

c/ Pilot whales ()0), harbor porpoise (0), Dall's porpoise (10) and whitesided dolphins (10).

d/ Dall's porpoise.

e/ Except harbor porpoise.

f/ Harbor porpoise.

g/ Total cetacean take by all permit holders fishing in the North Atlantic Ocean may not exceed 622 common dolphins, 711 Atlantic whitesided dolphins, 365 harbor porpoise, 338 Stenella spp., 248 pilot whales, 234 grampus, 172 bottlenose dolphins, and 4 beaked whales.

h/ Pilot whales (5), harbor porpoise (5), and Atlantic whitesided dolphins (5).

H- Harassment Only.

ST- Small Take Exemption.

NMFS:F/M411:May 1985

TABLE 2

COMMON AND SCIENTIFIC NAMES OF MARINE MAMMALS INVOLVED IN SCIENTIFIC RESEARCH/PUBLIC DISPLAY PERMIT APPLICATIONS

CETACEANS

COMMON NAME	SCIENTIFIC NAME
ATLANTIC BOTTLENOSE DOLPHIN	TURSIOPS TRUNCATUS
ATLANTIC SPOTTED DOLPHIN	STENELLA PLAGIODON
ATLANTIC WHITE-SIDED DOLPHIN	LAGENORHYNCHUS ACUTUS
BAIRD'S BEAKED WHALE	BERARDIUS BAIRDII
BLACK RIGHT WHALE, NORTHERN RIGHT	BALAENA GLACIALIS
BLAINVILLE'S BEAKED WHALE	MESOPLODON DENSIROSTRIS
BLUE WHALE	BALAENOPTERA MUSCULUS
BOTTLENOSE DOLPHINS	TURSIOPS SP.
BOTTLENOSE WHALES	HYPEROODON SP.
BOWHEAD WHALE	BALAENA MYSTICETUS
BRYDE'S WHALE	BALAENOPTERA EDENI
COMMERSON'S DOLPHIN	CEPHALORHYNCHUS COMMERSONII
COMMON DOLPHIN	DELPHINUS DELPHIS
CUVIER'S BEAKED WHALE	ZIPHIUS CAVIROSTRIS
DALL'S PORPOISE	PHOCOENOIDES DALLI
DUSKY DOLPHIN	LAGENORHYNCHUS OBSCURUS
DWARF SPERM WHALE	KOGIA SIMUS
FALSE KILLER WHALE	PSEUDORCA CRASSIDENS
FIN WHALE, FINBACK	BALAENOPTERA PHYSALUS
FINLESS PORPOISE	NEOPHOCAENA PHOCAENOIDES
FRANCISCANA	PONTOPORIA BLAINVILLEI
FRASER'S (SARAWAK) DOLPHIN	LAGENODELPHIS HOSEI
GINKGO-TOOTHED BEAKED WHALE	MESOPLODON GINKGODENS
GRAY WHALE	ESCHRICHTIUS ROBUSTUS
GRAY'S BEAKED WHALE	MESOPLODON GRAYI
HARBOR PORPOISE	PHOCOENA PHOCOENA
HEAVISIDE'S DOLPHIN	CEPHALORHYNCHUS HEAVISIDII
HUBBS' BEAKED WHALE	MESOPLODON CARLHUBBSI
HUMPBACK WHALE	MEGAPTERA NOVAEANGLIAE
KILLER WHALE	ORCINUS ORCA
LAGENORHYNCHINE DOLPHINS	LAGENORHYNCHUS SP.
LONG-FINNED PILOT WHALE	GLOBICEPHALA MELAENA
MELON-HEADED WHALE, ELECTRA	PEPONOCEPHALA ELECTRA
MINKE WHALE	BALAENOPTERA ACUTOROSTRATA
NARWHAL	MONODON MONOCEROS
NORTHERN BOTTLENOSE WHALE	HYPEROODON AMPULLATUS
NORTHERN RIGHT WHALE DOLPHIN	LISSODELPHIS BOREALIS
PACIFIC WHITE-SIDED DOLPHIN	LAGENORHYNCHUS OBLIQUIDENS
PILOT WHALES UNSPECIFIED	GLOBICEPHALA SP.
PYGMY KILLER WHALE	FERESA ATTENUATA
PYGMY RIGHT WHALE	CAPEREA MARGINATA
PYGMY SPERM WHALE	KOGIA BREVICEPS
RIGHT WHALES UNSPECIFIED	BALAENA SP.
RISSO'S DOLPHIN, GRAMPUS	GRAMPUS GRISEUS
ROUGH-TOOTHED DOLPHIN	STENO BREDANENSIS

TABLE 2 Continued

CETACEANS

COMMON NAME	SCIENTIFIC NAME
SEI WHALE	BALAENOPTERA BOREALIS
SHEPHERD'S BEAKED WHALE	TASMACETUS SHEPHERDI
SHORT-FINNED PILOT WHALE	GLOBICEPHALA MACRORHYNCHUS
SOUTHERN RIGHT WHALE	BALAENA AUSTRALIS
SPERM WHALE	PHYSETER MACROCEPHALUS
SPINNER DOLPHIN	STENELLA LONGIROSTRIS
SPOTTED DOLPHIN	STENELLA ATTENUATA
SPOTTED DOLPHIN	STENELLA FRONTALIS
STENELLINE DOLPHINS	STENELLA SP.
STRAP-TOOTHED WHALE	MESOPLODON LAYARDII
STRIPED DOLPHIN, STREAKER	STENELLA COERULEOALBA
TRUE'S BEAKED WHALE	MESOPLODON MIRUS
UNSPECIFIED CETACEANS	CETACEA
UNSPECIFIED TOOTHED WHALES	ODONTOCETI
VAQUITA, COCHITO	PHOCOENA SINUS
WHITE WHALE, BELUKHA	DELPHINAPTERUS LEUCAS
WHITE-BEAKED DOLPHIN	LAGENORHYNCHUS ALBIROSTRIS

PINNIPEDS/SIRENIANS

AMSTERDAM ISLAND FUR SEAL	ARCTOCEPHALUS TROPICALIS
ARCTOCEPHALINE FUR SEALS	ARCTOCEPHALUS SP.
ATLANTIC HARBOR SEAL	PHOCA VITULINA VITULINA
BAIKAL SEAL	PHOCA SIBIRICA
BEARDED SEAL	ERIGNATHUS BARBATUS
CALIFORNIA SEA LION	ZALOPHUS CALIFORNIANUS
CASPIAN SEAL	PHOCA CASPICA
CRABEATER SEAL	LOBODON CARCINOPHAGUS
DUGONG	DUGONG DUGON
GRAY SEAL	HALICHOERUS GRYPUS
HARBOR SEALS	PHOCA VITULINA
HARP SEAL, GREENLAND SEAL	PHOCA GROENLANDICA
HAWAIIAN MONK SEAL	MONACHUS SCHAUINSLANDI
HOODED SEAL, BLADDERNOSE SEAL	CYSTOPHORA CRISTATA
KERGUELEN FUR SEAL	ARCTOCEPHALUS GAZELLA
LARGHA SEAL, SPOTTED SEAL	PHOCA LARGHA
LEOPARD SEAL	HYDRURGA LEPTONYX
NORTHERN ELEPHANT SEAL	MIROUNGA ANGUSTIROSTRIS
NORTHERN FUR SEAL	CALLORHINUS URSINUS
NORTHERN SEA LION, STELLER SEA LION	EUMETOPIAS JUBATUS
PACIFIC HARBOR SEAL	PHOCA VITULINA RICHARDI
RIBBON SEAL	PHOCA FASCIATA
RINGED SEAL	PHOCA HISPIDA
ROSS SEAL	OMMATOPHOCA ROSSII
SOUTH AFRICAN FUR SEAL	ARCTOCEPHALUS PUSILLUS
SOUTH AMERICAN SEA LION	OTARIA FLAVESCENS
SOUTHERN ELEPHANT SEAL	MIROUNGA LEONINA
UNSPECIFIED MARINE MAMMALS	UNSPECIFIED MARINE MAMMALS
UNSPECIFIED PINNIPEDS	PINNIPEDIA
WALRUS	ODOBENUS ROSMARUS
WEDDELL SEAL	LEPTONYCHOTES WEDDELLI
WEST INDIAN MANATEE	TRICHECHUS MANATUS
WESTERN ATLANTIC HARBOR SEAL	PHOCA VITULINA CONCOLOR

TABLE 3
SYNOPSIS OF PERMIT APPLICATIONS

	AS OF March 31, 1984			April 1, 1984 TO March 31, 1985			AS OF March 31, 1985
	SCIENTIFIC RESEARCH	PUBLIC DISPLAY	SCIENTIFIC AND PUBLIC DISPLAY	SCIENTIFIC RESEARCH	PUBLIC DISPLAY	SCIENTIFIC AND PUBLIC DISPLAY	CUMULATIVE TOTAL
NO. OF APPLICATIONS SUBMITTED	289	311	14	18	29	0	661
NO. OF ANIMALS REQUESTED(TOTAL)	673,449	1,931	6,434	179,847	82	0	861,743
OF THESE:							
TAKEN BY KILLING	23,172	0	0	900	0	0	24,072
TAKEN AND KEPT ALIVE	419	1,341	122	0	59	0	1,941
KILLED IN CAPTIVITY	49	0	0	0	0	0	49
TAKEN AND RELEASED	554,526	44	451	36,080	0	0	591,101
FOUND DEAD	3,674	1	0	0	0	0	3,675
STRANDED/EXCHANGED	114	245	3	4	17	0	383
IMPORTS	3,074	0	0	18	0	0	3,092
HARASS	88,421	300	5,858	142,845	0	0	237,424
ACTION TAKEN							
NO. OF APPLICATIONS FORWARDED TO MARINE MAMMAL COMMISSION	245	232	7	13	14	0	511
NO. OF APPLICATIONS REVIEWED BY MARINE MAMMAL COMMISSION	243	229	7	9	8	0	496
NO. OF APPLICATIONS WITHDRAWN	6	17	1	0	1	0	25
NO. OF APPLICATIONS REFERRED TO FISH AND WILDLIFE	1	0	0	0	0	0	1
NO. OF APPLICATIONS REFERRED TO STATES	14	1	0	0	0	0	15
NO. OF APPLICATIONS REFERRED TO REGIONS	5	14	2	0	0	0	21
NO. OF APPLICATIONS RESOLVED THROUGH AGREEMENT	1	2	0	0	0	0	3
NO. OF APPLICATIONS RETURNED DUE TO INSUFFICIENT OR INAPPROPRIATE SUBMITTAL	21	52	4	2	7	0	86
NO. OF APPLICATIONS DENIED	2	8	0	0	0	0	10
NO. OF APPLICATIONS APPROVED	239	216	7	8	8	0	478
NO. OF APPLICATIONS PENDING	0	0	0	8	13	0	21
NO. OF ANIMALS APPROVED(TOTAL)	662,572	1,003	5,913	4,904	26	0	674,418
OF THESE:							
TAKEN BY KILLING	21,655	0	0	900	0	0	22,555
TAKEN AND KEPT ALIVE	389	814	98	0	16	0	1,317
KILLED IN CAPTIVITY	49	0	0	0	0	0	49
TAKEN AND RELEASED	552,767	0	265	3,000	0	0	556,032
FOUND DEAD	2,937	0	0	0	0	0	2,937
STRANDED/EXCHANGED	99	189	0	4	10	0	302
IMPORTS	3,052	0	0	0	0	0	3,052
HARASS	81,624	0	5,550	1,000	0	0	88,174

NOTE: APPLICATIONS AND PERMITS INVOLVING HARASSMENT OF MARINE MAMMALS OR TAKING/IMPORTING OF MARINE MAMMALS FOUND DEAD USUALLY DO NOT SPECIFY NUMBERS, AND THEREFORE ARE NOT REFLECTED IN THE NUMBERS OF ANIMALS FOR THESE CATEGORIES.

TABLE 4
NUMBER OF CETACEANS REQUESTED IN SCIENTIPIC RESEARCH/PUBLIC DISPLAY PERMIT APPLICATIONS(1)

	REQUESTED AS OP March 31, 1984					REQUESTED April 1, 1984 THRU March 31, 1985					
COMMON NAME	TAKEN BY KILLING	TAKEN AND KEPT ALIVE	KILLED IN CAPTIVITY	TAGGED OR TAKEN AND RELEASED	FOUND DEAD/ STRND	TAKEN BY KILLING	TAKEN AND KEPT ALIVE	KILLED IN CAPTIVITY	TAGGED OR TAKEN AND RELEASED	FOUND DEAD/ STRND	CUMMULAT-IVE TOTAL REQUESTED
ATLANTIC SPOTTED DOLPHIN	------	10	------	-------	------	------	------	------	-------	------	10
ATLANTIC WHITE-SIDED DOLPHIN	------	6	------	15	------	------	------	------	-------	------	21
BAIRD'S BEAKED WHALE	------	------	------	25	6	------	------	------	-------	------	31
BLACK RIGHT WHALE, NORTHERN RIGHT	------	------	------	10	------	------	------	------	-------	------	10
BLUE WHALE	------	------	------	75	------	------	------	------	-------	------	75
BOTTLENOSE DOLPHINS	70	733	------	51,319	35	------	46	------	-------	------	52,203
BOWHEAD WHALE	------	------	------	225	190	------	------	------	-------	------	415
BRYDE'S WHALE	------	------	------	420	1	------	------	------	-------	------	421
COMMERSON'S DOLPHIN	------	38	------	-------	------	------	------	------	-------	------	38
COMMON DOLPHIN	155	26	------	75,742	9	------	------	------	-------	------	75,932
CUVIER'S BEAKED WHALE	------	2	------	-------	------	------	------	------	-------	------	2
DALL'S PORPOISE	960	4	------	910	18	------	------	------	-------	------	1,892
DUSKY DOLPHIN	------	------	------	76	------	------	------	------	-------	------	76
DWARF SPERM WHALE	------	------	------	-------	3	------	------	------	-------	------	3
PALSE KILLER WHALE	------	15	------	6	------	------	2	------	-------	------	23
PIN WHALE, FINBACK	------	------	------	415	------	------	------	------	-------	------	415
FINLESS PORPOISE	------	6	------	-------	------	------	------	------	-------	------	6
PRASER'S (SARAWAK) DOLPHIN	70	------	------	1,050	------	------	------	------	-------	------	1,120
GINKGO-TOOTHED BEAKED WHALE	------	------	------	-------	3	------	------	------	-------	------	3
GRAY WHALE	------	------	------	332	101	------	------	------	-------	------	433
HARBOR PORPOISE	------	12	------	203	1,389	------	------	------	-------	------	1,604
HUBBS' BEAKED WHALE	------	------	------	-------	6	------	------	------	-------	------	6
HUMPBACK WHALE	------	------	------	895	------	------	------	------	-------	------	895
KILLER WHALE	------	54	------	317	23	------	------	------	-------	------	394
LONG-PINNED PILOT WHALE	------	2	------	-------	30	------	------	------	-------	------	32
MELON-HEADED WHALE, ELECTRA	45	4	------	300	------	------	------	------	-------	------	349
MINKE WHALE	------	------	------	890	3	------	------	------	-------	------	893
NARWHAL	------	4	------	-------	------	------	------	------	-------	------	4
NORTHERN RIGHT WHALE DOLPHIN	------	2	------	130	18	------	------	------	-------	------	150
PACIPIC WHITE-SIDED DOLPHIN	------	58	------	527	48	------	------	------	-------	------	633
PILOT WHALES UNSPECIPIED	------	12	------	15	------	------	------	------	-------	------	27
PYGMY KILLER WHALE	45	8	------	300	------	------	------	------	-------	------	353
PYGMY SPERM WHALE	------	------	------	15	6	------	------	------	-------	------	21
RISSO'S DOLPHIN, GRAMPUS	70	12	------	1,105	15	------	------	------	-------	------	1,202
ROUGH-TOOTHED DOLPHIN	70	9	------	5,050	------	------	------	------	-------	------	5,129
SEI WHALE	------	------	------	470	------	------	------	------	-------	------	470
SHORT-PINNED PILOT WHALE	70	41	------	135	33	------	------	------	-------	------	279
SOUTHERN RIGHT WHALE	------	------	------	10	------	------	------	------	-------	------	10
SPERM WHALE	------	------	------	1,055	------	------	------	------	-------	------	1,055
SPINNER DOLPHIN	2,929	40	------	103,967	------	------	------	------	-------	------	106,936
SPOTTED DOLPHIN	4,925	16	------	157,793	------	------	------	------	-------	------	162,734
STENELLINE DOLPHINS	------	------	------	100	3	------	------	------	-------	------	103
STRIPED DOLPHIN, STREAKER	100	------	------	50,065	------	------	------	------	-------	------	50,165
UNSPECIFIED CETACEANS	370	43	------	1,241	------	------	------	------	-------	------	1,654
VAQUITA, COCHITO	------	------	------	-------	2	------	------	------	-------	------	2
WHITE WHALE, BELUKHA	90	41	------	870	80	------	4	------	-------	------	1,085
WHITE-BEAKED DOLPHIN	------	2	------	-------	------	------	------	------	-------	------	2
TOTALS:(2)	9,969	1,200	0	456,073(3)	2,022	0	52	0	0	0	469,316

(1) SPECIMEN IMPORTS AND HARASSMENT REQUESTS NOT INCLUDED IN THIS TABLE.
(2) WHERE PERMIT APPLICANTS REQUESTED A TOTAL NUMBER OP ANIMALS TO BE TAKEN WITHOUT SPECIFYING THE NUMBER TO BE TAKEN FROM A PARTICULAR SPECIES, THE NUMBER REQUESTED WAS LISTED UNDER UNSPECIFIED CETACEA.
(3) A SINGLE APPLICATION REQUESTED 432,850 CETACEANS AND ACCOUNTS POR NEARLY THE TOTAL NUMBER IN THIS CATEGORY.

TABLE 5
NUMBER OF PINNIPEDS REQUESTED IN SCIENTIFIC RESEARCH/PUBLIC DISPLAY PERMIT APPLICATIONS(1)

	REQUESTED AS OF March 31, 1984					REQUESTED April 1, 1984 THRU March 31, 1985					
COMMON NAME	TAKEN BY KILLING	TAKEN AND KEPT ALIVE	KILLED IN CAPTIVITY	TAGGED OR TAKEN AND RELEASED	FOUND DEAD/ STRND	TAKEN BY KILLING	TAKEN AND KEPT ALIVE	KILLED IN CAPTIVITY	TAGGED OR TAKEN AND RELEASED	FOUND DEAD/ STRND	CUMMULATIVE TOTAL REQUESTED
ARCTOCEPHALINE FUR SEALS	2	------	------	80	------	------	------	------	-------	------	82
BAIKAL SEAL	------	4	------	-------	------	------	4	------	-------	------	8
BEARDED SEAL	880	8	------	400	70	300	------	------	-------	------	1,658
CALIFORNIA SEA LION	534	969	4	6,382	624	------	3	------	1,000	16	9,532
CASPIAN SEAL	------	2	------	-------	------	------	------	------	-------	------	2
CRABEATER SEAL	3,288	------	------	9,055	------	------	------	------	90	------	12,433
GRAY SEAL	------	40	------	-------	1	------	------	------	-------	------	41
HARBOR SEALS	7,789	139	------	8,072	730	------	------	------	1,000	------	17,730
HARP SEAL, GREENLAND SEAL	------	40	------	-------	------	------	------	------	-------	------	40
HAWAIIAN MONK SEAL	16	5	------	4,239	------	------	------	------	80	------	4,340
KERGUELEN FUR SEAL	151	------	------	980	------	------	------	------	90	------	1,221
LARGHA SEAL, SPOTTED SEAL	1,120	------	------	1,100	------	200	------	------	-------	------	2,420
LEOPARD SEAL	688	8	------	3,130	------	------	------	------	90	------	3,916
NORTHERN ELEPHANT SEAL	154	18	------	38,818	307	------	------	------	30,050	------	69,347
NORTHERN FUR SEAL	------	35	------	9	3	------	------	------	-------	5	52
NORTHERN SEA LION, STELLER SEA-LION	16,315	4	------	12,669	191	100	------	------	500	------	29,779
RIBBON SEAL	755	2	------	400	------	200	------	------	-------	------	1,357
RINGED SEAL	1,680	12	------	707	125	100	------	------	-------	------	2,624
ROSS SEAL	283	6	------	1,115	------	------	------	------	90	------	1,494
SOUTH AFRICAN FUR SEAL	------	6	------	10	------	------	------	------	-------	------	16
SOUTH AMERICAN SEA LION	------	14	------	-------	------	------	------	------	-------	------	14
SOUTHERN ELEPHANT SEAL	153	------	------	490	------	------	------	------	90	------	733
UNSPECIFIED MARINE MAMMALS	------	------	------	-------	50	------	------	------	-------	------	50
UNSPECIFIED PINNIPEDS	13,600	------	12	100	------	------	------	------	-------	------	13,712
WALRUS	600	------	------	-------	------	------	------	------	-------	------	600
WEDDELL SEAL	609	25	37	11,340	------	------	------	------	3,000	------	15,011
WEST INDIAN MANATEE	------	1	------	-------	------	------	------	------	-------	------	1
TOTALS:(2)	48,617	1,338	53	99,096	2,101	900	7	0	36,080	21	188,213

(1) SPECIMEN IMPORTS AND HARASSMENT REQUESTS NOT INCLUDED IN THIS TABLE.
(2) WHERE PERMIT APPLICANTS REQUESTED A TOTAL NUMBER OF ANIMALS TO BE TAKEN WITHOUT SPECIFYING THE NUMBER TO BE TAKEN FROM A PARTICULAR SPECIES, THE NUMBER REQUESTED WAS LISTED UNDER UNSPECIFIED PINNIPEDS OR UNSPECIFIED MARINE MAMMALS, IF CETACEANS ALSO WERE INVOLVED.

TABLE 6
NUMBER OF CETACEANS AUTHORIZED IN SCIENTIFIC RESEARCH/PUBLIC DISPLAY PERMIT APPLICATIONS(1)

	A U T H O R I Z E D AS OF March 31, 1984					A U T H O R I Z E D April 1, 1984 THRU March 31, 1985					
COMMON NAME	TAKEN BY KILLING	TAKEN AND KEPT ALIVE	KILLED IN CAPTIVITY	TAGGED OR TAKEN AND RELEASED	FOUND DEAD/ STRND	TAKEN BY KILLING	TAKEN AND KEPT ALIVE	KILLED IN CAPTIVITY	TAGGED OR TAKEN AND RELEASED	FOUND DEAD/ STRND	CUMMULAT-IVE TOTAL AUTHORIZED
ATLANTIC WHITE-SIDED DOLPHIN	------	6	------	5	------	------	------	------	-------	------	11
BLACK RIGHT WHALE, NORTHERN RIGHT	------	------	------	10	------	------	------	------	-------	------	10
BLUE WHALE	------	------	------	40	------	------	------	------	-------	------	40
BOTTLENOSE DOLPHINS	70	511	------	51,309	21	------	10	------	-------	------	51,921
BOWHEAD WHALE	------	------	------	225	190	------	------	------	-------	------	415
BRYDE'S WHALE	------	------	------	410	------	------	------	------	-------	------	410
COMMERSON'S DOLPHIN	------	12	------	-------	------	------	------	------	-------	------	12
COMMON DOLPHIN	155	18	------	75,727	------	------	------	------	-------	------	75,900
DALL'S PORPOISE	960	------	------	910	------	------	------	------	-------	------	1,870
DUSKY DOLPHIN	------	------	------	76	------	------	------	------	-------	------	76
FALSE KILLER WHALE	------	12	------	6	------	------	2	------	-------	------	20
FIN WHALE, FINBACK	------	------	------	370	------	------	------	------	-------	------	370
FRASER'S (SARAWAK) DOLPHIN	70	------	------	1,050	------	------	------	------	-------	------	1,120
GRAY WHALE	------	------	------	332	100	------	------	------	-------	------	432
HARBOR PORPOISE	------	6	------	105	1,251	------	------	------	-------	------	1,362
HUMPBACK WHALE	------	------	------	785	------	------	------	------	-------	------	785
KILLER WHALE	------	24	------	175	------	------	------	------	-------	------	199
LONG-FINNED PILOT WHALE	------	2	------	-------	30	------	------	------	-------	------	32
MELON-HEADED WHALE, ELECTRA	45	4	------	300	------	------	------	------	-------	------	349
MINKE WHALE	------	------	------	860	------	------	------	------	-------	------	860
NORTHERN RIGHT WHALE DOLPHIN	------	------	------	130	------	------	------	------	-------	------	130
PACIFIC WHITE-SIDED DOLPHIN	------	29	------	527	------	------	------	------	-------	------	556
PILOT WHALES UNSPECIFIED	------	8	------	-------	------	------	------	------	-------	------	8
PYGMY KILLER WHALE	45	4	------	300	------	------	------	------	-------	------	349
RISSO'S DOLPHIN, GRAMPUS	70	8	------	1,105	------	------	------	------	-------	------	1,183
ROUGH-TOOTHED DOLPHIN	70	9	------	5,050	------	------	------	------	-------	------	5,129
SEI WHALE	------	------	------	440	------	------	------	------	-------	------	440
SHORT-FINNED PILOT WHALE	70	31	------	135	------	------	------	------	-------	------	236
SPERM WHALE	------	------	------	860	------	------	------	------	-------	------	860
SPINNER DOLPHIN	2,929	21	------	103,967	------	------	------	------	-------	------	106,917
SPOTTED DOLPHIN	4,925	10	------	157,793	------	------	------	------	-------	------	162,728
STENELLINE DOLPHINS	------	------	------	100	------	------	------	------	-------	------	100
STRIPED DOLPHIN, STREAKER	100	------	------	50,050	------	------	------	------	-------	------	50,150
UNSPECIFIED CETACEANS	340	43	------	914	------	------	------	------	-------	------	1,297
VAQUITA, COCHITO	------	------	------	-------	2	------	------	------	-------	------	2
WHITE WHALE, BELUKHA	25	32	------	870	80	------	------	------	-------	------	1,007
WHITE-BEAKED DOLPHIN	------	2	------	-------	------	------	------	------	-------	------	2
TOTALS:(2)	9,874	792	0	454,936(3)	1,674	0	12	0	0	0	467,288

(1) SPECIMEN IMPORTS AND HARASSMENT ACTIVITIES NOT INCLUDED IN THIS TABLE.
(2) WHERE A PERMIT SPECIFIED THE TOTAL NUMBER OF ANIMALS TO BE TAKEN WITHOUT SPECIFYING THE NUMBER TO BE TAKEN FROM A PARTICULAR SPECIES, THE NUMBER AUTHORIZED WAS LISTED UNDER UNSPECIFIED CETACEA.
(3) A SINGLE PERMIT AUTHORIZED 432,850 CETACEANS AND ACCOUNTS FOR NEARLY THE TOTAL NUMBER IN THIS CATEGORY.

TABLE 7

NUMBER OF PINNIPEDS AUTHORIZED IN SCIENTIFIC RESEARCH/PUBLIC DISPLAY PERMIT APPLICATIONS(1)

	AUTHORIZED AS OF March 31, 1984					AUTHORIZED April 1, 1984 THRU March 31, 1985					
COMMON NAME	TAKEN BY KILLING	TAKEN AND KEPT ALIVE	KILLED IN CAPTIVITY	TAGGED OR TAKEN AND RELEASED	FOUND DEAD/ STRND	TAKEN BY KILLING	TAKEN AND KEPT ALIVE	KILLED IN CAPTIVITY	TAGGED OR TAKEN AND RELEASED	FOUND DEAD/ STRND	CUMMULATIVE TOTAL AUTHORIZED
ARCTOCEPHALINE FUR SEALS	2	------	------	80	------	------	------	------	-------	------	82
BAIKAL SEAL	------	4	------	-------	------	------	4	------	-------	------	8
BEARDED SEAL	660	8	------	400	70	300	------	------	-------	------	1,438
CALIFORNIA SEA LION	534	357	2	6,352	469	------	------	------	-------	9	7,723
CASPIAN SEAL	------	2	------	-------	------	------	------	------	-------	------	2
CRABEATER SEAL	3,288	------	------	9,055	------	------	------	------	-------	------	12,343
GRAY SEAL	------	29	------	5	------	------	------	------	-------	------	34
HARBOR SEALS	1,662	100	------	7,802	568	------	------	------	-------	------	10,132
HARP SEAL, GREENLAND SEAL	------	40	------	-------	------	------	------	------	-------	------	40
HAWAIIAN MONK SEAL	16	3	------	3,826	------	------	------	------	-------	------	3,845
KERGUELEN FUR SEAL	151	------	------	980	------	------	------	------	-------	------	1,131
LARGHA SEAL, SPOTTED SEAL	920	------	------	1,100	------	200	------	------	-------	------	2,220
LEOPARD SEAL	688	8	------	3,130	------	------	------	------	-------	------	3,826
NORTHERN ELEPHANT SEAL	154	11	------	38,818	286	------	------	------	-------	------	39,269
NORTHERN FUR SEAL	------	20	------	-------	------	------	------	------	-------	5	25
NORTHERN SEA LION, STELLER SEA LION	800	4	------	12,669	83	100	------	------	-------	------	13,656
RIBBON SEAL	655	2	------	400	------	200	------	------	-------	------	1,257
RINGED SEAL	1,400	12	------	704	125	100	------	------	-------	------	2,341
ROSS SEAL	283	6	------	1,115	------	------	------	------	-------	------	1,404
SOUTH AFRICAN FUR SEAL	------	------	------	10	------	------	------	------	-------	------	10
SOUTH AMERICAN SEA LION	------	12	------	-------	------	------	------	------	-------	------	12
SOUTHERN ELEPHANT SEAL	153	------	------	490	------	------	------	------	-------	------	643
UNSPECIFIED MARINE MAMMALS	15	------	------	15	------	------	------	------	-------	------	30
UNSPECIFIED PINNIPEDS	20	------	12	100	25	------	------	------	-------	------	157
WALRUS	200	------	------	-------	------	------	------	------	-------	------	200
WEDDELL SEAL	609	25	37	11,181	------	------	------	------	3,000	------	14,852
TOTALS:(2)	12,210	643	51	98,232	1,626	900	4	0	3,000	14	116,680

(1) SPECIMEN IMPORTS AND HARASSMENT ACTIVITIES NOT INCLUDED IN THIS TABLE.

(2) WHERE A PERMIT SPECIFIED THE TOTAL NUMBER OF ANIMALS TO BE TAKEN WITHOUT SPECIFYING THE NUMBER TO BE TAKEN FROM A PARTICULAR SPECIES, THE NUMBER AUTHORIZED WAS LISTED UNDER UNSPECIFIED PINNIPEDS OR UNSPECIFIED MARINE MAMMALS, IF CETACEANS WERE ALSO INVOLVED.

TABLE 8
SUMMARY OF PERMITS FOR PERMANENT REMOVAL FROM THE WILD - CETACEANS
AS OF March 31, 1985

SPECIES	******** PERMITS ********			********** NUMBER OF ANIMALS **********					
	ISSUED	EXPIRED	CURRENT	REQUESTED	AUTHORIZED	REPLACEMENTS	AUTHORIZATION EXPIRED	TAKEN (1)	TAKE REMAINING
ATLANTIC WHITE-SIDED DOLPHIN	1	1	0	6	6	0	6	0	0
BOTTLENOSE DOLPHINS	99	81	18	590	566	34	130	428	74
COMMERSON'S DOLPHIN	1	1	0	12	12	0	0	12	0
COMMON DOLPHIN	5	4	1	181	173	5	149	27	2
DALL'S PORPOISE	1	0	1	960	960	0	0	0	960
FALSE KILLER WHALE	5	4	1	14	14	0	4	7	3
FRASER'S (SARAWAK) DOLPHIN	2	2	0	70	70	0	70	0	0
HARBOR PORPOISE	1	1	0	6	6	0	6	0	0
KILLER WHALE	5	5	0	21	20	0	10	11	0
LONG-FINNED PILOT WHALE	1	1	0	2	2	0	2	0	0
MELON-HEADED WHALE, ELECTRA	3	3	0	49	49	0	47	2	0
PACIFIC WHITE-SIDED DOLPHIN	5	3	2	23	23	0	8	30	12
PYGMY KILLER WHALE	3	3	0	49	49	0	49	0	0
RISSO'S DOLPHIN, GRAMPUS	4	3	1	78	78	0	71	1	6
ROUGH-TOOTHED DOLPHIN	5	4	1	79	79	2	77	2	2
SHORT-FINNED PILOT WHALE	12	10	2	99	98	3	78	18	6
SPINNER DOLPHIN	4	4	0	2,956	2,950	3	2,779	179	0
SPOTTED DOLPHIN	3	3	0	4,935	4,935	0	4,676	271	0
STRIPED DOLPHIN, STREAKER	1	1	0	100	100	0	100	0	0
UNSPECIFIED CETACEANS	4	4	0	383	383	0	383	0	0
WHITE WHALE, BELUKHA	10	5	5	53	53	1	15	31	12
WHITE-BEAKED DOLPHIN	1	0	1	2	2	0	0	6	2
TOTAL NUMBER OF ANIMALS:				10,668	10,628	48	8,660	1,025	1,079

(1) ANIMALS TAKEN INCLUDE THOSE INADVERTENTLY KILLED DURING THE COURSE OF RESEARCH AUTHORIZING TYPES OF TAKE OTHER THAN PERMANENT REMOVAL.

TABLE 9
SUMMARY OF PERMITS FOR PERMANENT REMOVAL FROM THE WILD - PINNIPEDS
AS OF March 31, 1985

SPECIES	******** PERMITS ********			********** NUMBER OF ANIMALS **********					
	ISSUED	EXPIRED	CURRENT	REQUESTED	AUTHORIZED	REPLACEMENTS	AUTHORIZATION EXPIRED	TAKEN (1)	TAKE REMAINING
ARCTOCEPHALINE FUR SEALS	1	1	0	2	2	0	2	0	0
BAIKAL SEAL	2	1	1	8	8	0	0	4	4
BEARDED SEAL	8	4	4	930	930	0	153	177	608
CALIFORNIA SEA LION	73	71	2	869	855	13	128	303	476
CASPIAN SEAL	1	1	0	2	2	0	2	0	0
CRABEATER SEAL	5	3	2	3,288	3,288	0	177	277	2,834
GRAY SEAL	4	4	0	26	26	0	10	18	0
HARBOR SEALS	33	28	5	1,606	1,576	0	478	883	339
HARP SEAL, GREENLAND SEAL	1	1	0	40	40	0	20	20	0
HAWAIIAN MONK SEAL	1	0	1	19	19	0	0	2	19
KERGUELEN FUR SEAL	3	1	2	151	151	0	6	0	145
LARGHA SEAL, SPOTTED SEAL	6	3	3	1,020	1,020	0	128	116	795
LEOPARD SEAL	7	5	2	696	696	0	40	76	580
NORTHERN ELEPHANT SEAL	3	2	1	160	160	0	5	29	128
NORTHERN FUR SEAL	2	1	1	20	20	0	0	19	1
NORTHERN SEA LION, STELLER SEA LION	8	3	5	880	880	0	106	326	450
RIBBON SEAL	8	4	4	830	830	0	256	66	508
RINGED SEAL	10	5	5	1,418	1,418	0	440	339	640
ROSS SEAL	6	4	2	289	289	0	28	3	258
SOUTH AMERICAN SEA LION	3	3	0	12	12	0	4	8	0
SOUTHERN ELEPHANT SEAL	4	2	2	153	153	0	8	0	145
UNSPECIFIED MARINE MAMMALS	1	1	0	0	15	u	11	4	0
UNSPECIFIED PINNIPEDS	2	1	1	12	32	3	15	0	20
WALRUS	1	1	0	200	200	0	20	180	0
WEDDELL SEAL	8	6	2	671	671	0	91	60	520
TOTAL NUMBER OF ANIMALS:				13,302	13,293	16	2,128	2,910	8,470

(1) ANIMALS TAKEN INCLUDE THOSE INADVERTENTLY KILLED DURING THE COURSE OF RESEARCH AUTHORIZING TYPES OF TAKE OTHER THAN PERMANENT REMOVAL.

Table 10. INTERNATIONAL WHALING COMMISSION CATCH LIMITS: 1973-1984[1]

	SOUTHERN HEMISPHERE						NORTH PACIFIC							NORTH ATLANTIC					TOTAL		
	Fin	Minke	Sei	Sperm (M)	Sperm (F)	Bryde's	Fin	Minke	Sei & Bryde's	Sei	Bryde's	Sperm (M)	Sperm (F)	Fin	Minke	Sei	Sperm		TOTAL COMMERCIAL QUOTAS	Other[7]	TOTAL
1973/74 1973 Mtg	1,450[2]	5,000[2]	4,500[2]	8,000	5,000	0	550	.....	3,000	...	.....	6,000	4,000	...	.....	...	.....		37,500	8,173	45,673
1974/75 1974 Mtg	1,000[2]	7,000[2]	4,000[2]	8,000	5,000	0	300	.....	2,000	...	.....	6,000	4,000	...	.....	...	.....		37,300	5,173	42,473
1975/76 1975 Mtg	220[2]	6,810	2,230	5,870	4,870	0	0	.....	.....	0	1,363	5,200	3,100	365	2,550	...	.....		32,578	1,358	33,936
1976/77 1976 Mtg	0	8,900	1,863	3,894	897	0	0	541	.....	0	1,000	4,320	2,880	455	2,483	132	685		28,050		28,050
1977/78 1977 Mtg	0	5,690	771	4,538	1,370	0	0	400	.....	0	524	5,105	1,339	459	2,555	84	685		23,520		23,520
1978/79 1978 Mtg	0	6,221	0	3,820	1,055	0	0	400	.....	0	454	3,800	0	455	2,552	84	685		19,526		19,526
1979/80 1979 Mtg	0	8,102	0	...580...		264	0	1,361	.....	0	479	1,350	0	604	2,543	100	273		15,656		15,656
1980/81 1980 Mtg	0	7,072	0	...300...		866[3]	0	1,361	.....	0	529	890	0	701	2,554	100	130		14,523		14,523
1981/82 1981 Mtg	0	8,102	0	....0....		866[3]	0	1,361	.....	0	526	0	0	561	2,554	100	0		14,070 (13,448)		14,070[8]
1982/83 1982 Mtg	0	7,072	0	....0....		165[4]	0	1,361	.....	0	546	400[5]	0	293	2,434[6]	100	0		12,371		12,371
1983/84 1983 Mtg	0	6,655	0	....0....		165[4]	0	421[9]	.....	0	536	-- [10]	0	287	1,226[11]	100	0		9,390		9,390
1984/85 1984 Mtg	...	4,224	....	....0....		164[4]	....	320[9]	.....	..	357	.....	....	281	1,177[11]	100	.....		6,623		6,623

1/ Catch limits are for the Southern Hemisphere pelagic season (November of the year of the meeting through April of the following year) and all coastal seasons of the year following the meeting. The Commission applies quotas to coastal seasons in the year whaling begins. Therefore, e.g., the column labelled "1980/81" reports quotas for the 1980/81 Southern Hemisphere pelagic season and the 1981 coastal seasons, all of which were established at the 1980 IWC meeting.

2/ Catch limit covering Antarctic catch only (south of 40° latitude).

3/ Of this figure, 622 whales could not be taken legally by member countries due to the factory ship moratorium and/or the Indian Ocean Sanctuary.

4/ Available to be taken from the Peruvian stock in a six-month period starting in November but counted for the season of the following year.

5/ The Commission also agreed to a 1982 coastal season catch limit of 450. Both catch limits include an allowable bycatch of up to 11.5% females.

6/ Although the Commission adopted no catch limit for the Northeastern stock, Norway limited catches to 1,690 as though the IWC had established this limit. The number has therefore been reflected in the totals.

7/ Whales taken by IWC members but not included in the catch limits.

8/ The figure in parentheses takes into account the reduction discussed in footnote 3 as well as catch limits totalling 151 North Atlantic fin whales for 1982 that were for stocks that had not been exploited since 1971.

9/ The catch limits for the Sea of Japan-Yellow Sea-East China Sea stock is zero but footnoted in the Schedule to read, "provided that the remainder from the previous block quota of 3,634 for the years 1980-1984, inclusive, may be taken in the years 1984 and 1985."

10/ The 1984 catch limit, if any, will be set at the 1984 Annual Meeting.

11/ Includes 300 whales from the West Greenland stock, some of which may be taken by aboriginal subsistence whaling operations in Greenland.

Table 11. POPULATION ESTIMATES: CETACEA

Name Order: Cetacea Suborder: Mysticeti Family: Eschrichtiidae	Estimated World Total	Comparison of Population Data[1]	Arctic Circum-polar	PACIFIC				ATLANTIC				SOUTHERN OCEAN			
				Asia	Alaska	North America	South America	North America	Europe	Africa	South America	New Zealand	Aus-tralia	Sub Ant-arctic	Ant-arctic
Gray whale (Eschrichtius robustus)	15,100/ 15,600	best			15,100/ 15,600										
Family: Balaenopteridae															
Minke whale (Balaenoptera acutorostrata)	315,800/ 331,800	incomplete		13,500	+[2]	+		+	44,000/ 60,000					258,300	
Sei whale (Balaenoptera borealis)	33,800/ 51,400	incomplete		<----22,000/37,000----->				+ 2,600	2,000/	+	+	+			9,800/ 11,800
Bryde's whale (Balaenoptera edeni)	30,200 55,500	incomplete		14,600/ 39,900		+	15,600	+		+	+	+	+		
Fin whale (Balaenoptera physalus)	117,600/ 120,300	incomplete		<----14,600/18,600----->				3,600/ 6,300	12,000/ 18,000					<----------85,000--------->	
Blue whale (Balaenoptera musculus)	11,700	incomplete		<---------1,600-------->				100	+	+	+			<----------10,000--------->	
Humpback whale (Megaptera novaeangliae)	9,500/ 10,000	incomplete		<---------1,200-------->				5,800	"few hundred"		+			<-------2,500/3,000------->	
Family: Balaenidae															
Right whale (Balaena glacialis)	3,100 3,200	incomplete		100/ 200					"few hundred"		+	+		<-----------3,000--------->	
Bowhead whale (Balaena mysticetus)	3,871	complete	+		3,871										

[1] Best = the most comprehensive estimates throughout the range of the species.
Complete = good population estimates throughout the range of the species.
Incomplete = population estimates only in parts of the range of the species.

[2] Although a population occurs in this area, the numbers are either unknown or the data are not available.

Table 11 Continued. POPULATION ESTIMATES: CETACEA

Name Order: Cetacea Suborder: Odontoceti Family: Delphinidae	Estimated World Total	Comparison of Population Data[1]	Arctic Circumpolar	PACIFIC				ATLANTIC				SOUTHERN OCEAN			
				Asia	Alaska	North America	South America	North America	Europe	Africa	South America	New Zealand	Australia	Sub Antarctic	Antarctic
Atlantic white-sided dolphin (Lagenorhynchus acutus)	no data	Incomplete						24,000	+						
Pacific white-sided dolphin (Lagenorhynchus obliquidens)	no data	Incomplete		+		30,000/ 50,000									
Northern right whale dolphin (Lissodelphis borealis)	no data	Incomplete		+	+	+									
Southern right whale dolphin (Lissodelphis peronii)	no data	Incomplete										+	+	+	
Risso's dolphin (Grampus griseus)	no data	Incomplete		+	+	+	+	10,000	+	+	+				
Melon-headed whale (Peponocephala electra)	no data	Incomplete				+	+								
Pygmy killer whale (Feresa attenuata)	no data	Incomplete				+	+	+	+	+	+	+			
False killer whale (Pseudorca crassidens)	no data	Incomplete		+		+	+	+	+	+	+	+	+		
Long-finned pilot whale (Globicephala melaena)	no data	Incomplete						+	+						
Short-finned pilot whale (Globicephala macrorhynchus)	no data	Incomplete				+	+	+	+	+	+				
Killer whale (Orcinus orca)	no data	Incomplete	+	+	+	+	+	+	+	+	+	+	+	+	+
Rough-toothed dolphin (Steno bredanensis)	no data	Incomplete				+	+	+		+	+				
Bottlenose dolphin (Tursiops truncatus)	no data	Incomplete		+		+	+	14,000/ 23,000	+	+	+				
Spinner dolphin (Stenella longirostris)	no data	Incomplete		+		900,000		+		+	+				
Spotted dolphin (Stenella attenuata)	no data	Incomplete		+		2.2 Mil									
Atlantic spotted dolphin (Stenella plagiodon)	no data	Incomplete						+	+	+	+				
Striped dolphin (Stenella coeruleoalba)	no data	Incomplete		+		2.3 Mil		+							
Common dolphin (Delphinus delphis)	no data	Incomplete		+		900,000		31,000	+	+	+	+	+	+	
Fraser's dolphin (Lagenorhynchus hosei)	no data	Incomplete				+				+	+				

Table 11 Continued. POPULATION ESTIMATES: CETACEA

Name Order: Cetacea Suborder: Odontoceti	Estimated World Total	Comparison of Population Data[1]	Arctic Circum-polar	PACIFIC				ATLANTIC				SOUTHERN OCEAN			
				Asia	Alaska	North America	South America	North America	Europe	Africa	South America	New Zealand	Aus-tralia	Sub Ant-arctic	Ant-arctic
Family: Phocoenidae															
Harbor porpoise (Phocoena phocoena)	no data	incomplete		+	+	+		18,000	+						
Dall's porpoise (Phocoenoides dalli)	920,000	complete			920,000										
Family: Monodontidae															
Beluga, belukha, white whale (Delphinapterus leucas)	62,000/ 88,000	complete	62,000/ 88,000	+	+	+		+	+						
Narwhal (Monodon monoceros)	30,000	incomplete	30,000	+	+	+		+	+						
Family: Physeteridae															
Sperm whale (Physeter macrocephalus)	982,200	complete		198,000	<----274,000---->			<----------99,500---------->				+		<-----410,700----->	
Pygmy sperm whale (Kogia breviceps)	no data	incomplete		+		+	+	+		+	+				
Dwarf sperm whale (Kogia simus)	no data	incomplete		+		+	+	+		+	+				
Family: Ziphiidae															
Baird's beaked whale (Berardius bairdii)	no data	incomplete		+	+	+						+	+	+	

Table 12. POPULATION ESTIMATES: PINNIPEDIA[1]

Name Order: Carnivora Suborder: Pinnipedia Family: Otariidae	Estimated World Total	Comparison of Population Data[2]	Arctic	PACIFIC				ATLANTIC				SOUTHERN OCEAN			
			Circum-polar	Asia	Alaska	North America	South America	North America	Europe	Africa	South America	New Zealand	Aus-tralia	Sub Ant-arctic	Ant-arctic
California sea lion (Zalophus californianus)	177,000	complete				157,000	20,000								
Northern sea lion (Eumetopias jubatus)	230,000/ 240,000	complete		20,000/ 30,000	200,000	10,000									
South American sea lion (Otaria flavescens)	273,000	complete					228,000				45,000				
Australian sea lion (Neophoca cinerea)	2,000/ 3,000	complete											2,000/ 3,000		
Hooker's (New Zealand) sea lion (Phocarctos hookeri)	6,000											6,000			
Alaska or Northern fur seal (Callorhinus ursinus)	1,155,000	best		332,000	819,000	4,000									
Guadalupe fur seal (Arctocephalus townsendi)	1,600	complete				1,600									
Juan Fernandez fur seal (Arctocephalus philippii)	705/ 750	complete					705/ 750								
Galapagos fur seal (Arctocephalus galapagoensis)	1,000/ 5,000	incomplete					1,000/ 5,000								
South American fur seal (Arctocephalus australis)	346,000	incomplete					294,000				52,000				
Cape (South African) and Australian fur seals (Arctocephalus pusillus)	870,000	complete								850,000			20,000		

Table 12 Continued. POPULATION ESTIMATES: PINNIPEDIA[1]

Name Order: Carnivora Suborder: Pinnipedia Family: Otariidae Continued	Estimated World Total	Comparison of Population Data[2]	Arctic Circum-polar	PACIFIC				ATLANTIC				SOUTHERN OCEAN			
				Asia	Alaska	North America	South America	North America	Europe	Africa	South America	New Zealand	Aus-tralia	Sub Ant-arctic	Ant-arctic
New Zealand fur seal (Arctocephalus forsteri)	58,000	complete										25,000		33,000	
Antarctic (Kerguelen) fur seal (Arctocephalus gazella)	350,000	complete												350,000	
Subantarctic fur seal (Arctocephalus tropicalis)	122,000	Incomplete								113,000				9,900	
Order: Carnivora Suborder: Pinnipedia Family: Phocidae															
Largha seal (Phoca largha)	335,000/ 450,000	Incomplete		135,000/ 200,000	200,000/ 250,000										
Harbor (Common) seal (Phoca vitulina)	390,000/ 413,500	Incomplete		10,000/ 15,000	260,000	42,000		30,000/ 45,000	48,000/ 51,500						
Ringed seal (Phoca l= pusa hispida)	6/7 Million	best	6/7 Million												
Baikal seal (Phoca sibirica)	40,000/ 50,000	complete		40,000/ 50,000											
Caspian seal (Phoca caspica)	500,000 600,000	complete		500,000/ 600,000											
Harp Seal (Phoca groenlandica)	1,650,000/ 3,250,000	complete						1,050,000/ 2.1 mil	600,000/ 1,150,000						
Ribbon seal (Phoca l= histriophocal fasciata)	200,000/ 250,000	complete	200,000/ 250,000												
Gray seal (Halichoerus grypus)	101,000/ 133,000	complete						24,000/ 55,000	77,000/ 78,500						

Table 12 Continued. POPULATION ESTIMATES: PINNIPEDIA[1]

Name Order: Carnivora Suborder: Pinnipedia Family: Phocidae Continued	Estimated World Total	Comparison of Population Data[2]	Arctic Circum-polar	PACIFIC				ATLANTIC				SOUTHERN OCEAN			
				Asia	Alaska	North America	South America	North America	Europe	Africa	South America	New Zealand	Aus-tralia	Sub Ant-arctic	Ant-arctic
Bearded seal (Erignathus barbatus)	exceeds 500,000	incomplete		exceeds 500,000											
Hooded seal (Cystophora cristata)	500,000/ 600,000	complete							500,000/ 600,000						
Mediterranean monk seal (Monachus monachus)	500	best							500						
Caribbean monk seal (Monachus tropicalis)	extinct or near extinct	best													
Hawaiian monk seal (Monachus schauinslandi)	500/ 1,500	complete				500/ 1,500									
Southern elephant seal (Mirounga leonina)	600,000	complete									300,000			300,000	
Northern elephant seal (Mirounga angustirostris)	100,000	best				100,000									
Crabeater seal (Lobodon carcinophaga)	15,000,000	best													15,000,000
Ross seal (Ommatophoca rossii)	220,000	complete													220,000
Leopard seal (Hydrurga leptonyx)	500,000	complete													500,000
Weddell seal (Leptonychotes weddelli)	750,000	complete													750,000

[1]All species of pinnipeds are included in the tables because of available data.
[2]Best = the most comprehensive estimates throughout the range of the species.
Complete = good population estimates throughout the range of the species.
Incomplete = population estimates only in parts of the range of the species.

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Gray whale flukes... California coast.

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